PERCEPTIONS OF CAREER AND TECHNICAL EDUCATION HELD BY INDIANA'S PUBLIC SCHOOL COUNSELORS

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MICHELLE D. GREWE

DISSERTATION ADVISOR: DR. MARILYNN QUICK

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ABSTRACT

DISSERTATION/THESIS/RESEARCH PAPER/CREATIVE PROJECT: Counselor Perceptions of CTE in Indiana

STUDENT: Michelle Grewe

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Often the roles of Indiana counselors are not in alignment with counselor standards set at the state and national levels, resulting in time taken away from providing career counseling to students and parents, specifically as the counseling relates to CTE related options. One purpose of this study was to better understand relationships and differences related to Indiana's middle and high school counselors' knowledge levels, self-assessed knowledge levels, educational backgrounds, available counseling time, and common variables with their perceptions of CTE initiatives and programs in Indiana. An online survey collected data from public school counselors throughout the state of Indiana. The data collected and analyzed in this study did not reveal many statistically significant results. However, counselors' self-assessed knowledge levels and their perceptions of CTE indicated a statistically significant difference, as counselors' perceived knowledge level went up, so did counselors' perceptions of CTE. Based on descriptive statistics of the study, Indiana counselors lack background experiences in CTE, and are faced with low amounts of face-to-face time with students and large high caseloads. These issues could influence their ability to provide CTE guidance. A suggestion for future research is to understand how counselors are prepared to understand CTE in their initial training, as well as how parents and other stakeholders in the lives of children perceive CTE.

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CHAPTER 1

INTRODUCTION

Providing students with training to succeed in the workforce has historically been one of the many roles and responsibilities of educators (Gysbers, 2001; Schenck, Actil, Smith, & Dahir, 2012; Threeton, 2007). Career related decisions have become more complex for students as the needs of the modern workforce continuously evolve and secondary educational requirements become increasingly more difficult to navigate (Anctil, Smith, Schenck, & Dahir, 2012; Feller, 2003; Lynch, 2009). As a result, the roles of school counselors and educators related to the career guidance of students moving from secondary education to the workforce or postsecondary education have increased in importance (Hughes & Karp, 2006; Morgan, Greenwaldt, & Gosselin, 2014; Packard, Leach, Ruiz, Nelson, & DiCocco, 2012; Threeton, 2007). Government leadership has acknowledged the value of counselor assistance in the lives of students by including counselors as Career and Technical Education (CTE) professionals in the Carl D. Perkins Career and Technical Improvement Act of 2006 (Bozick & Dalton, 2013; Dougherty, 2016; Hughes & Karp, 2006; Threeton, 2007). In addition, support through federal funding has led to some states rethinking educational pathways from high school to post-secondary education and/or the work force (Hughes & Karp, 2006).

CTE programming provides students with academic, technical, and employability skills, with the intent of preparing students with the ability to adjust and adapt as needed for career success following graduation from secondary or postsecondary education (Bevins, Carter, Jones, Moye, & Ritz, 2012; Gentry, Peters, & Mann, 2007; Hughes & Karp, 2006; Mukuni & Price, 2016; Stern, 2010). In fact, high school students who have taken three or more CTE courses in the same focus field are more likely to graduate than their peers are and with better preparation

for future studies (Jimenez & Sargrad, 2018). CTE programs provide the opportunity to graduate from high school prepared for the workforce with industry certifications, licenses, postsecondary certificates, or degrees (Indiana Department of Education, 2018; Jimenez & Sargrad, 2018; Office of career, technical, and adult education (OCTAE), 20).

Businesses throughout the state are transitioning from on-the-job training to hiring employees who already have some kind of formal training (Hall & Rogers, 2014). As a result, the need to train individuals for job success is increasingly becoming a responsibility of the P-16 education system. The design of CTE programming in Indiana is to provide students with the skills needed to succeed in high demand careers that often come with the potential of earning high wages. With a wide range of skill building opportunities inherent to the curriculum, students of all backgrounds and socioeconomic statuses have an opportunity to benefit from CTE classes during high school (Indiana Department of Education, 2018; Mukuni & Price, 2016).

Educators and business leaders throughout Indiana are seeking ways to work together to meet each other's needs and CTE is often the solution (Hughes & Karp, 2006; Indiana Department of Education, 2018). Indiana is currently experiencing a shortage of employees to fill available middle-skill jobs, which require more than a high school education, but not a four-year degree. Middle-skill jobs make up 58% of the state's labor market, but currently only 47% of employees have the needed skills to fill the available jobs. The National Skills Coalition projects the availability of over half a million middle-skill jobs in Indiana by 2020 (Halls & Rogers, 2014).

Advanced manufacturing and health care are the two industry clusters in Indiana expressing the most difficulties related to the lack of middle-skill workers (Hall & Rogers, 2014). This shortage of technicians creates problems for businesses trying to put new

technology into place in the workforce. Employers find themselves in need of hiring employees who are innovative, possess the ability to problem solve and think critically (Hart Research Associates, 2013; Lynch, 2009). They also seek employees who possess both hard skills, defined and measurable, and soft skills, which are more subjective in nature (Laker & Powell, 2011).

Background of the Problem

School counseling is a demanding profession. Professional literature is full of references on how school counselors should provide comprehensive student support (American School Counselor Association, 2017). Their role is becoming increasingly important as high school graduation requirements continue to change. Students are not all on the same pathway and each student faces the task of finding the path best suited for their individual skills, interests, and abilities. The role of today's school counselor is to execute efforts to address each student's academic, personal/social, and career development needs (American School Counselor Association, 2017). This leads to a need to perform continual assessments of their work to determine which of their responsibilities are highest priority. A counselor's list of jobs is long and involved, sometimes including extra duties such as administrative support or discipline (ASCA, 2012).

Researchers have concluded that counselors have a significant level of influence on the preparedness of students at graduation (Carey & Dimmitt, 2012; Gilfillan, 2017; Pérusse, DeRonck, & Parzych, 2017; Rosenbaum, Miller, & Krei, 1996). Over time, their roles and responsibilities have changed. Research from the 1960s found counselors guide students by using channeling and personal judgment. Then in the 1970s counselors moved toward providing students with graduation help, including social/emotional counseling, and performing testing

duties. Economic hardships came in the 1990s resulting in a decrease in counselors in public schools, which directly influenced student services (Rosenbaum, Miller, & Krei, 1996).

Counselor roles are shifting again with Indiana's newly developed graduation plan, set for full implementation with the graduating class of 2023. The plan offers a variety of pathways a student can take to connect their secondary studies to postsecondary education and the workplace. This new systemic graduation model places greater emphasis on the school's role to provide college and career readiness, with a growing recognition that both college readiness and career readiness are valuable and worthy of a unified vision. CTE courses fit nicely with the plan as they emphasize both academics and work skills to make broad connections to future education and work (Bozick & Dalton 2013; Hubbard & McDonald, 2014; Hyslop, 2008; Stipanovic, Lewis, & Stringfield, 2012; Threeton, 2007). Are students receiving the knowledge and resources necessary to choose the path that best matches their future goals? Counselor knowledge and perceptions at both the middle and high school levels can considerably affect guidance opportunities provided to students.

A survey of counselors conducted by the College Board in 2011 reported counselors had an average caseload of 389 students, with high performing schools that have high college acceptance rates providing lower caseloads of 335. Schools with the greatest economic struggles saw higher caseloads with an average of 427. The data support a correlation between student to counselor ratio and the positive impact of the counselor on students (College Board Advocacy Center, 2011). This research has resulted in the beginning of a shift within education and has influenced the work counselors have been able to do with students.

Like counseling programs, CTE programs have undergone major changes compared to those of generations ago. Historically CTE, previously called vocational education, did not serve

the same purposes as it does today. Today's society is impacted by strongly held beliefs connected to vocational education of the past making it difficult for CTE to be recognized for its value (Dougherty, 2016; Indiana Department of Education, 2018; Lynch, 2009). Lasting perceptions of CTE could affect counselor advice and recommendations provided to students and parents in Indiana. CTE is currently emerging as an option for education reform that equips high school graduates with the necessary skills to succeed in post-secondary education and the workforce (Bozick & Dalton, 2013; Dougherty, 2016; Gentry, Peters & Mann, 2007; Hughes & Karp, 2006; Jimenez & Sargrad, 2018; Mukuni & Price, 2016; Stern, 2010).

Public education plays a critical role influencing the economy in an ever-changing society. Across the United States, CTE programming and policies are being adapted to match those changes, resulting in a need for education staff to keep pace. Information provided to parents about options for their children will allow them to understand that today's CTE has evolved from vocational education of the past to teach skills that prepare students for the realities they will face upon graduation.

What remains largely unknown in the research literature is how public school counselors in Indiana influence participation in CTE as a part of career development. What is needed in future research is the analysis of counselor perceptions and knowledge of CTE to begin to analyze whether or not counselors in Indiana's schools are meeting the career counseling needs of students, communities, and businesses in an ever-changing economy and workforce, and in alignment with transitioning graduation requirements.

Statement of the Problem

All teachers, administrators, and support staff of a school play a role in helping students succeed. Counselors specifically offer guidance to students on the opportunities available to

them after they graduate and the paths available for them to prepare for those options (Anctil, Smith, Schenck, & Dahir, 2012; Belasco, 2013; Hughes & Karp, 2006). The roles of middle and high school counselors continue to grow and evolve (Gysbers, 2001; Herr, 2001; Morgan, Greenwaldt, & Gosselin, 2014; Paisley & Borders, 1995). Support comes from counselors for decisions related to student academic, social/emotional, and career needs, factors such as the previously mentioned high caseloads and the need to wear many hats may contribute to students experiencing a lack of exposure to comprehensive career guidance from their counselors. Thus, students may be less able to make informed college and career related choices to ensure preparation for life following secondary education, which would require other sources for the information (Anctil, Smith, Schenck, & Dahir, 2012; Belasco, 2013; Schenck, Anctil, Smith & Dahir, 2012). Exposure to college and career information allows students in middle and high school to connect class work with what they wish to do following high school. Early experiences provide students the flexibility to make proactive changes as their individual interests and skills evolve.

Past perceptions and stigmas of vocational education being a placement for those of special populations, such as those with special needs and minorities, still exist (Indiana Department of Education, 2018; Dougherty, 2016). These lasting perceptions may play a role in who enrolls in CTE programming and the disproportionate placement of subgroups that sometimes occurs. State and federal legislation and funding have added new value and focus on CTE, but have counselors adjusted their work accordingly? The most recent study found for CTE perceptions in Indiana was by Sawyer (1977). Participating teachers, counselors, and administrators indicated a belief that CTE experiences hindered students from participating in education after high school, suggesting past perceptions of the purpose of CTE still exist.

A review of professional literature revealed an absence of data related to Indiana school counselors' knowledge and value of CTE. Are middle and high school counselors in the state of Indiana providing comprehensive, up-to-date, accurate information to all students as they select their path of study? Students, parents, and counselors each have roles in the selection of coursework, and information and guidance coming from counselors may have substantial impact in guiding students' future educational and career plans.

Purpose of the Study

The purpose of this study was threefold. The first purpose of this study was to describe demographics of the school counselor population in Indiana. Another purpose was to identify the relationships that exist between Indiana's middle and high school counselors' knowledge levels, self-assessed knowledge levels, educational backgrounds, and available counseling time with their perceptions of CTE initiatives and programs in Indiana. The last purpose of this study was to identify differences among middle and high school counselors' knowledge and self-assessed knowledge, as well as differences found with gender, years of counseling experience, years of teaching experience, size of student caseload, and number of students in school to counselor perceptions of CTE initiatives and programs in Indiana. A Qualtrics survey collected the data. One section of the survey measured counselors' actual knowledge about CTE programs, and another section asked counselors to self-assess their strength of that knowledge. The independent variables include high school counselor knowledge levels of Indiana CTE programming, educational backgrounds, and amount of available counseling time. The dependent variable is the Indiana counselor perception of CTE.

Research Questions

The research questions that guided this investigation include:

1. What are the differences between counselors' knowledge and counselors' self-assessed knowledge?
2. What are the relationships between counselors' knowledge levels and their perceptions about CTE programs and between counselors' self-assessed knowledge levels of CTE and their perceptions about CTE programs?
3. What is the relationship between counselors' educational backgrounds (e.g. attended a CTE program or traditional academic program) and their perceptions of CTE programs?
4. What is the relationship between the amount of time middle and high school career counselors have available for career counseling and their perceptions of CTE programs?
5. What are the differences when comparing the independent variables of gender, years of counseling and teaching experience, and number of students in the school, to counselor perceptions of CTE?

Theoretical Framework

Educational leaders are redesigning CTE programming and missions to reflect student and economic needs in Indiana. CTE, the central focus of this study, aligns well with the Constructivism Theory. Constructivism explains how individuals know what they know (Brown, 1998; Hein, 2016; Ultanir, 2012). Learning is an active process, and individuals learn through activities they engage in, the consequences of their actions, and reflections of what they have experienced (Axinite, 2014; Brown & Lent, 2012; Cooperstein & Kocevar-Weidinger, 2004; Doolittle & Camp, 1999; Hein, 2016; Peavy, 1995; Ultanir, 2012). Career development

learning happens when an individual actively constructs learning while thoughtfully taking actions (Cooperstein & Kocevar-Weidinger, 2004; Peavy, 2001).

Behaviorism Theory, the foundational learning theory for CTE, has been transitioning from to Constructivism Theory to better reflect the realities of the 21st century (Doolittle & Camp, 1999). Both theories support the implicit training of specific job skills as a part of the curriculum. The selection of Constructivism for this study is reflective of the new educational focus areas of CTE on higher order thought processes, problem solving, and working collaboratively (Brown, 1998; Doolittle & Camp, 1999). These changes in curriculum affect the thoughts and choices of students and counselors for future career decisions.

Significance of the Study

The gateway for students deciding between the many career and education options after high school is most often their middle and high school counselor(s). As such, middle and high school counselors are important to the development of Indiana's future workforce, and many educational leaders believe counselors should be proactive in addressing those needs. One of the intended results of this study is to understand the academic and career counseling provided to students in Indiana before and during high school.

Positive and negative effects come from middle school and high school counselors' guidance given to students in the process of making education and career decisions, which can influence the rest of their lives. Today's counselors have worked many years with a strong focus on the academics of college preparation. However, the mantra supporting college-for-all in many high schools is unrealistic (Aliaga, Kotamraju, & Stone III, 2012; Symonds, Schwartz, Ferguson, 2011).

Educational leaders, including superintendents, curriculum directors, and building principals, have a role in creating opportunities for ALL students. There are many documented positive outcomes for students and communities that come from CTE programming. CTE bridges the need to address ALL student needs. An increased need for technical skills in the workforce will continue to be a driving force in education. Increased CTE enrollment can also positively affect Indiana's economy as it addresses the need for more skilled workers. In the school setting, informed educational leaders can align workforce needs and student outcomes at graduation. Almost no research to date draws attention to the role of middle and high school counselors in the placement of students into CTE programs in Indiana. This study can contribute to the decisions Indiana's leaders make because the research is specific to Indiana.

The results of the study may provide universities with information to make improvements in counselor training. Research has found that counselors have large caseloads and students often make course selections based on the influence of friends and family. Factual advice given to students is necessary, and therefore counselors should be knowledgeable about all options. The ability to make informed career choices early on in secondary education can make transitions from middle school to high school, and high school to postsecondary or career, much easier and successful for students.

When principals do not understand the significance of comprehensive counseling for career and college readiness guidance, miscellaneous tasks may be assigned to their counselors that take them away from important guidance roles. Knowledge of the common variables affecting how guidance activities support student decision making may affect their job assignments. A leader armed with this information can provide the professional support needed

to the current counseling staff, as well as knowledge to guide what to look for when hiring new counseling staff. This study may provide some insight for educational leaders into what is occurring at that decision-making point where students often begin a pathway that affects the rest of their life. As such, the results may influence administrative awareness of assigning roles, which can affect future sharing of information to students and parents about CTE.

Descriptive analysis found time related issues that building leaders should be aware of when evaluating the roles of their counselors. Lack of face-to-face time with students, high student caseloads, and additional jobs related to scheduling and testing are common among Indiana's counselors. Each of these has implications on the counseling opportunities in the building.

In addition to supporting school corporation leaders, this research aims to serve those in educational leadership at the Indiana Department of Education. Knowledge gained may inform leaders of potential reasons students are or are not enrolling in CTE programs throughout the state. The application of the knowledge to postsecondary counselor preparation programs will better educate those in their classes about CTE.

The significance of understanding counselors and their knowledge and perceptions of CTE is that it may inform an understanding that leaders can use to direct and support guidance provided by counselors that impact programming choices made by students. Current available research has focused on counselor actions, knowledge, and perceptions related to CTE in various states across the United States of America as well as on subgroups, such as socio-economic groups and students with disabilities. A gap in the literature exists for counselors in Indiana. This study adds another state with an all-encompassing look at the student population to the literature base. Information obtained throughout the entire state of Indiana can be used to fill the

gap in research. This study will add to the body of knowledge of educators and researchers through securing counselor input about the lenses they use to advise students by examining various relationships related to knowledge levels, educational backgrounds, career counseling times, and their perception of CTE.

Definition of Terms

The following definitions provide a common language based on the context of the study:

***ASCA* (American School Counselor Association).** A professional organization made up of school counselors who are licensed/certified with the qualifications and skills to address the academic, personal/social, and career development needs of students (Bain, 2012; Schenck, Anctil, Smith, & Dahir, 2012).

ASCA National Model. A framework for a comprehensive, data-driven school counseling program made with the domains of academic, personal/social, and career development needs, each with assigned standards ("Indiana school counseling research review Indiana chamber of commerce foundation," 2017; Gysbers, 2013; Schenck, Anctil, Smith, & Dahir, 2012).

Career pathways. A coherent, articulated sequence of academic and career courses, beginning in grade 9 and leading to an associate degree, industry-recognized certificate or licensure, or a baccalaureate degree and beyond (Hughes & Karp, 2006; "How states are making career readiness count: A 2016 update," 2016).

Career readiness. The ability to adapt and commit to lifelong learning, with a mastery of key knowledge, and the skills and dispositions that vary from one career to another and change over time along a developmental continuum ("Career technical education and advanced placement," 2013).

Career Technical Education (CTE). A program of study that prepares high school students with the knowledge, skills, and abilities needed for a wide range of careers through the integration of core academic knowledge with technical and occupational knowledge (Bevins, Carter, Jones, Moye, & Ritz, 2012; Gentry, Peters, & Mann, 2007).

Carl D. Perkins Career and Technical Education Act of 2006. First known as the Carl D. Perkins Vocational and Technical Education Act, this legislation aimed to increase the quality of technical education within the United States in order to help the economy. This later became the Carl D. Perkins Career and Technical Education Improvement Act of 2006 and included: 1) Using the term "career and technical education" instead of "vocational education"; 2) Maintaining the Tech Prep program as a separate federal funding stream within the legislation; 3) Maintaining state administrative funding at 5 percent of a state's allocation (Bozick & Dalton, 2013; Dougherty, 2016, Threeton, 2007).

Constructivism. A learning theory based on the belief individuals learn by constructing meaning through interactions and experiences in the environment (Brown, 1998; Hein, 2016; Ultanir, 2012).

CTE Participant in Indiana. An Indiana student with one or more credits in any CTE course (www.doe.in.gov).

CTE Concentrator in Indiana. An Indiana student with at least six credits in CTE pathway courses in a state approved College and Career Pathway (www.doe.in.gov).

CTE Completer in Indiana. An Indiana student who has completed a sequence of CTE pathway courses and taken the state pathway assessment in a state approved College and Career Pathway (www.doe.in.gov).

Hard skills. Specific, teachable abilities that can be defined and measured. The skills,

often listed in a cover letter and on a resume, are taught in the classroom through books or other training materials, or on the job, such as proficiency in a foreign language, a degree or certificate, machine operation, and computer programming (Robles, 2012).

Indiana College and Career Pathway **(Program of Study)**. A sequenced set of secondary, and sometimes postsecondary, courses aligned to lead to an industry recognized credential or certification, or associates or baccalaureate degree at a postsecondary institution (www.doe.in.gov).

Middle-skill jobs. Jobs that require training beyond high school, but do not require a four-year degree (www.careertech.org).

Soft skills. Subjective skills, sometimes known as people skills, which are hard to quantify, broadly applicable across job titles and industries, such as communication, leadership, persuasion, time management, and teamwork skills (Robles, 2012).

Vocational-technical education. Training that provides practical experience, job related technical and job-related skills in a particular occupational field. It covers many careers and industries such as agriculture, home economics, office work, retail, hospitality and technology (Benson & Hayward, 1993).

Assumptions, Limitations, and Delimitations

There is an assumption that respondents in the study will answer survey questions honestly and factually. The collection of respondents' will be anonymous and with confidentiality to support the assumptions. Participation is voluntary, further supporting honesty with the belief participation means an interest in the topic. Limitations, constraints beyond my control, common with the use of survey instruments include time constraints for respondents who already feel overworked, and an unwillingness to participate due to the perception the study is questioning their motivation and knowledge. Also limiting, the use of a survey excludes the possibility for personal narratives to support answers given. The interpretation of a Likert-type

scale with options such as agree and strongly agree can differ among respondents and could affect study results. Delimitations, characteristics in my control that define the boundaries of my study, include the participation of counselors only within the state of Indiana, and only counselors employed in public school corporations.

Summary

This chapter presented an overview of the study to investigate various variables related to counselors in middle and high school and their perceptions as they relate to CTE. Knowing counselors are key to the exposure of information students receive for CTE, their understanding of the value of the programming to all students in their caseload has the potential to affect enrollment in CTE programs. The chapter included a background of the problem, a problem statement, the purpose of the study, research questions, the theoretical framework used, and significance of the study.

A standard five-chapter format organizes this study. Chapter Two includes a literature study on the history of CTE and how it has changed over time, a more in-depth look at the theoretical framework for the study, the common roles of middle and high school counselors, and factors that influence CTE participation in Indiana schools. Chapter Three explains the research design of the study, including the questions and procedures planned. Chapter Four addresses the survey data collected and the analyzation in relation to the research questions. Chapter Five provides the conclusions, implications for data use by leaders in education, and areas for future research.

CHAPTER 2

LITERATURE REVIEW

America's education system and the strength of the economy in our country are woven together. When preparing students for their future careers, educational leaders must consider the evolving global society we live in, recognizing employers need employees who have the ability to adapt, think creatively, and learn skills to succeed in a global economy. CTE, designed to provide relevant academic content, while preparing students with employability skills in preparation for their futures in education and careers (Bozick & Dalton, 2013; Hubbard & McDonald, 2014; Hyslop, 2008; Stipanovic, Lewis, & Stringfield, 2012; Threeton, 2007) is an investment in the future of our students and our economy (Bevins, Carter, Jones, Moye, & Ritz, 2012; Jocson, 2015).

The four principles of alignment, collaboration, accountability, and innovation build effective CTE programs. Alignment comes through programming options that address the needs of the labor market and provide opportunities for students with the 21st century skills needed for high demand jobs. Collaboration exists between educational leaders and employers working together to design and run programs. Accountability happens when schools work to improve the academic outcomes and employability skills of students with meaningful indicators of success in place. Innovation occurs through support by state policies, school practices, and employers with a focus on the needs of schools and providing financial support (Bevins, Carter, Jones, Moye, & Ritz, 2012; Jocson, 2015; Hughes & Karp, 2006).

In 2001, the No Child Left Behind legislation began the college-for-all movement and pressured schools to show evidence of academic growth for all students. This pressure resulted in schools focusing support on activities, lessons, and projects that aligned to state standards and

included the ability to measure academic growth (Morgan, Greenwaldt, & Gosselin, 2014; Schenck, Anctil, Smith, & Dahir, 2012). If classroom lessons and measurements lacked alignment they were not always supported (Kazis, 2005). Principals and administrators have, as a result, sometimes faced a dilemma of whether to offer CTE to students due to concerns these classes may take away from financial resources intended for other course offerings aligned with standards and tested to show academic achievement used for accountability measures (Bozick & Dalton, 2013; Hughes & Karp, 2006). However, CTE teachers have been able to show academic learning standards connected to their area of studies and aligned with state standards to support academic growth occurs within CTE programming, and the ability to reduce the dropout rate has been documented (Lynch, 2009; Mukuni & Price, 2016; Jocson, 2015).

Standard-based accountability reform, along with the perception that CTE coursework lacks measurable academic growth, has had a negative impact on CTE participation. Connecting academic standards to CTE coursework, along with teachers collaborating with colleagues from other departments for planning, instructing, and assessing will help to improve perceptions of the measurable academic value of CTE (Mukuni & Price, 2016). CTE plays a role in school accountability measures and should be an ongoing talking point in college and career counseling discussions (Stone & Lewis, 2012).

Theoretical Framework

Researchers use theoretical models as they seek to understand, describe, and explain circumstances (Doolittle & Camp, 1999). Practitioners who wish to help others succeed then apply these theories in the field. Constructivist Theory is a proactive approach to career development counseling supporting counselor creation of opportunities for empowered student choices. Constructivism focuses on how humans learn (Brown, 1998; Hein, 2016; Ultanir,

2012). Though several types of constructivism exist, Cognitive Constructivism aligns best with the new state and federal requirements of CTE (Doolittle & Camp, 1999). Constructivism provides a framework for middle and high school counselling programs; however, Constructivism does not imply that counselors will follow a defined set of techniques as they support students in their quest to make sense of their career development decisions (Brown, 1998; Peavy, 2001).

The counseling work of preparing students for the workforce under the old vocational education programming was a part of the Behaviorism Theory (learning through stimulus and response). Adjustments to that theory are happening due to rapid changes in the workforce, new management systems, and global competitiveness. The old theory supported the transmission of discrete, established skills sets and information from counselors to students. The adjustment should include learning environments that provide students with the ability to acquire pertinent knowledge and adapt with changing work environments (Brown, 1998; Doolittle & Camp, 1999). The theory of Constructivism, therefore, has become a more appropriate theory for counselors as CTE prepares students for their careers by including higher order thinking, problem solving skills, and opportunities to work collaboratively (Brown, 1998; Doolittle & Camp, 1999). However, CTE still requires definable competency lists and documentation of placements, both of which would be included within the Behaviorism Theory.

Principles of Cognitive Constructivism are based on the belief that learning is meant to take place in an active, not passive, process taking place as an authentic and real experience (Axinite, 2014; Brown, 1998; Cooperstein & Kocevar-Weidinger, 2004; Doolittle & Camp, 1999; Hein, 2016; Peavy, 1995; Ultanir, 2012). The theory supports a shift from knowledge being a *product* to it being a *process* (Ultanir, 2012), and according to Peavy (2001) supports the

student as the one seeking help and the counselor as the helper. Counselors support the creation of meaning through experiences in CTE by helping students become involved in experiences such as job shadowing, volunteering, apprenticeships, work experiences, and collaborative lessons. When paired with reflection, discussion, and dialogue experiences, there are many opportunities for counselors to influence student understanding and help create meaning, including that of self and career possibilities. Reflection also moves information from short-term to long-term memory, of value to both students and counselors (Cooperstein & Kocevar-Weidinger, 2004; Peavy, 2001).

The Cognitive Constructivist Theory grew through contributions by Jean Piaget, Jerome Bruner, Lev Vygotsky, Maria Montessori, and John Dewey (Ultanir, 2012). Dewey believed education happens through experiences, but that not all experiences are educational. The experiences need to connect to previous and future experiences to make meaning, as well as involve self-direction by the students in schools that are real, genuine, and meaningful. Using the term active learner, Dewey stressed learners need to do something as an active participant engaging in the world (Hein, 2016). According to Piaget, adaption and organization create meaning; the basis of learning is discovery. With recognition that social and cultural variables influence learning, Piaget emphasized the importance of learning in context within the environments the knowledge will be applied (Brown, 1998). Montessori believed in self-direction as a means for learning within a structured environment allowing natural curiosity to be the guide, and the teacher to serve as facilitator. Students choose what to be involved with, for how long, and with whom (Montessori, 1995; Ultanir, 2012). These theorists saw active learning to be more than moving around and participating in hands-on activities, but instead believed the

experiences lead to learning where students ask and are not told (Cooperstein & Kocevar-Weidinger, 2004).

The Constructivist premise for career counseling is on the enhancement of learning when personal meanings are the central task of the counseling activities. Counselors can either disempower or empower students through their approaches. Within Constructivism is the emphasis on the building of knowledge and knowing the "why," which relates to social and cultural experiences, life stages, and life situations, with a dependency on observation. This shift from learning through memorization and repetition to active learning decenters the counselor role. Support does not exist for the traditional approach of testing students and telling them in what areas they are or are not qualified. Counselors instead take on the role of facilitating, acting as a guide or co-explorer, as students form their own ideas and opinions and create their own postsecondary plans, making their own decisions and becoming a significant part of their own learning (Axinte, 2014; Grubb, 2002; Ultanir, 2012). This approach differs from models where counselors identify a future for a student and provide the steps to follow (Axinte, 2014). Counselors under Constructivism do not see their role strictly as information providers (Cooperstein & Kocevar-Weidinger, 2004; Hoskins, 1995). A counselor working under Constructivist Theory will not be able to operate under step-by-step guidance, which can be difficult for some (Hoskins, 1995).

Based on Constructivism Theory, counselor knowledge may come through past learning opportunities with CTE. Personal levels of exposure to CTE stand to be a factor in the advice given to students. One could hypothesize that those counselors who did not experience CTE as a student have not had the opportunity to create meaning through that process and therefore will have less information to pass along to students during career counseling sessions about CTE.

Families, communities, and counselors each have the possibility to provide some influence on student career decisions. At times, this takes place as a combined effort and the concept of learning through experiences of the Constructivist Theory applies to each person. Like counselors, these individuals may have gained their knowledge of CTE through a negative experience or perceptions and knowledge of the traditional vocational education programs. If so, they may have constructed an understanding misaligned with today's programming, which may negatively affect information given to the student.

Key principles for counselors under the Constructivism Theory include:

- Adults serve as guides and facilitators of learning, providing experiences for students that lead to processing and knowledge for academic and vocational education.
- The learner interacts with the environment to build understanding and perspectives, not passively absorbing and/or accepting existing knowledge from others.
- The learner finds solutions to problems.
- Meta construction leads to learning.
- Learning occurs in authentic and real-world situations.
- Learners are active, collaborative, self-monitoring, with the ability to both work independently and with others (Hein, 2016; Doolittle & Camp, 1999; Brown, 1998).

In summary, using the lens of Constructivism, connections exist between counselors and student participation in career preparation classes. In this theory, the counselor (helper) provides a framework for the student to create meaning and build experiences. Counselors provide

students with opportunities and incentives that allow them to create their own ideas and opinions about their future careers and discover their truths as individuals. Known for the freedom it provides as counselor and student work together in the career planning process (Axinite, 2014), Constructivism supports learning through action, building new knowledge upon prior knowledge, growing through social interaction, and engaging in authentic tasks. Constructivism is a theory also applicable beyond the counselor and student relationship to include parents and peers who are influential in the decision process.

Early Vocational-Technical Education

The federal government has defined the area of vocational-technical education to include any preparation for employment needing less than a baccalaureate degree (Benson & Hayward, 1993). Looking into the origins of vocational education supports an understanding of how it became Career and Technical Education (CTE) as it exists today. This section includes an overview of the history and funding of legislative movements, influential individuals involved with shaping these policies, and the role vocational education has historically played in schools. The missions, visions, priorities, and legislative acts have transformed over the years, yet ongoing perceptions of CTE exist today from the roots deeply embedded in history.

Training employees with the necessary skills to meet current industry standards and fill job vacancies was the original goal of vocational education. Beginning in the late 1800s, the need for educating citizens in the field of technical skills for vocations became apparent. The Morrill Act of 1862, also known as the Land Grant College Act, initiated programs in each state to provide aid to this segment of education (Lynch, 2009). Agriculture, home economics, and mechanical arts were the three most applicable skill areas at the time. More American students received the opportunity to attend and stay in school longer than students before them through

these programs. Reauthorized in 1890, the Morrill Act paved the way for vocational education to include students of color.

Vocational education involved considerable federal activity in the early 1900s. The United States Congress introduced more than 30 related bills from 1900 to 1917. These ideas came together in the Smith-Hughes Act in 1917, a transitional measure supported by a coalition of labor and manufacturer interests, a professional education organization, and two political parties with interests in agricultural and home economics (Hillison, 1995). Created by Representative Dudley Mays Hughes, the legislation of the Smith-Hughes Act separated vocational education with its own curriculum and separate funding (Benson & Hayward, 1993; Dougherty, 2016; Lynch, 2009; Threeton, 2007).

The Smith-Hughes Act influenced the field of vocational education by creating an educational identity and sense of importance for vocational training. Because of the Act, states were charged to create vocational boards separate from their educational boards, establish separate teacher preparation programs for traditional and vocational classrooms, provide vocational curriculum separate from traditional curriculum, and keep vocational funding separate from the money received for general education. The organization resulted in schools organized with two branches: one for those planning postsecondary education, and one for those preparing to enter the workforce (Aliaga, Kotamraju, & Stone III, 2014; Benson & Hayward, 1993; Jocson, 2015; Lynch, 2009; Stipanovic, Lewis, & Stringfield, 2012). Renamed the George-Reed Act, the Act increased funding for education related to home economics and agriculture, but gave no additional funding to trades and industry (Barlow, 1976).

Historical events have also influenced the role of vocational education. During World War II, vocational education focused on training students with the skills necessary for

manufacturing war weapons and materials needed to supply the United States military. The George-Barden Act of 1946 grew as a response to needs of the United States following the war. The original segregation of programming and curriculum (for those continuing their education and those who finish upon high school graduation) began with the Smith-Hughes Act and continues to have lasting impact on perceptions of today's CTE programs (Aliaga, Kotamraju, & Stone III, 2012). The combination of budgets from the Smith-Hughes Act and the George-Barden Act totaled over $36 million to support vocational education in the United States, demonstrating federal government support for this area of education. Through various acts, the United States government continued to provide separate guidance and funding for vocational education for many years (Hubbard & McDonald, 2014; Lynch, 2009).

Perkins Legislation

Throughout history, vocational education has had changing purposes and missions in response to political, social, and economic events. Original designs for the classes prepared students for running farms and working in factories, but did not prepare students for the 21st century workforce (Jocson, 2015; Lynch, 2009). Federal legislation, offering guidance and funding, has often led ongoing transformations. Since its original release, Carl D. Perkins legislation has served as a manual for guidance in all things related to vocational education, providing frameworks and funding to support academic achievement in CTE courses (Bozick & Dalton, 2013). Four reauthorizations in 22 years support attempts to keep pace with changes in education, economy, and the workforce.

Congress passed the first Carl D. Perkins Act in 1984. The Act sought to improve vocational programs, offer better services, and increase access to vocational education for students with special needs (Dougherty, 2016). In fact, 57% of the Perkins money was originally

set aside for disadvantaged groups of students (Lynch, 2009), continuing the tradition of separation of vocational education from mainstream education. The 1998 release of Perkins II, the biggest shift in policy since the initiation of funding for vocational education, placed an emphasis on academic and vocational skills integration. Another transition occurred with the Carl D. Perkins Act of 1998, known as Perkins III, as it set up a performance accountability system for academic and technical education, increased the emphasis on integration of technical and academic education, addressed special populations, and focused on placing students into postsecondary situations (Benson & Hayward, 1993; Bozick & Dalton, 2013; Stone & Aliaga, 2005; Threeton, 2007).

The Carl D. Perkins Career and Technical Education Act of 2006 is the most recent revision. Signed into law by President George W. Bush, and reauthorized by President Barack Obama in 2012, it includes three major areas of focus. First, an official title change occurred from Vocational Education to Career and Technical Education (CTE). The new name mirrored the focus on student learning directly applied to the demands of today's evolving workforce (Bozick & Dalton, 2013; Dougherty, 2016). The addition of counselors to the area of student guidance to provide information related to careers and how to plan for future work roles was the second change (Bozick & Dalton, 2013; Dougherty, 2016; Hughes & Karp, 2006; Threeton, 2007). The third change was the addition of an emphasis on integrating academics so the same concepts used in core classes became a part of the CTE curriculum. This resulted in CTE teachers rethinking curriculum to make it relevant to the current workforce (Bozick & Dalton, 2013; Jocson, 2015; "Reauthorization of Carl D. Perkins Vocational and Technical Act," 2007; Threeton, 2007). Although integration of academics in CTE programs has been a part of all four Carl D. Perkins Acts, expectations and accountability have increased with each reauthorization

(Castellano, Sundell, Overman, & Aliaga, 2012; Threeton, 2007). The latest reauthorization gave educators of CTE a wide range of roles and responsibilities.

Perkins IV defines CTE as:

> Organized educational activities that offer a sequence of courses that provides individuals with coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging professions: provides technical skills proficiency, an industry-recognized credential, a certificate, or an associate degree; and may include prerequisite courses that meet the requirements of this subparagraph; and include competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of an industry, including entrepreneurship, of an individual (Threeton, 2007).

Lasting Perceptions

According to the Oxford Dictionary, perception is defined as, "…the way in which something is regarded, understood, or interpreted" (https://en.oxforddictionaries.com). The amount of knowledge and exposure a person has on a subject likely impacts perceptions, both favorable and unfavorable. Perceptions related to CTE programs are often deeply rooted in history when placement and participation focus was on students with low academic achievement, behavioral problems, or special needs (Threeton, 2007). Vocational education received separate treatment from traditional academic programming.

Details in legislative acts are also sources for perceptions. A prime example of a historic legislative piece influencing current perceptions was the creation of the Smith-Hughes Act. This

act explicitly separated vocational and academic curriculum to prevent schools from using the allotted money for anything but vocation specific training for students who would not be attending college (Aliaga, Kotamraju, & Stone III, 2014; Benson & Hayward, 1993; Jocson, 2015; Lynch, 2009; Stipanovic, Lewis, & Stringfield, 2012). This creation of a vocational curriculum followed a "50–25–25 rule" meaning students spent 50% of school time participating in shop activities; 25% in related subjects; and 25% of school time focused on academic subjects. This vocational curriculum did not align with the academic curriculum and the differing approaches initiated the practice of tracking students (Aliaga, Kotamraju, & Stone, 2014; Doolittle & Camp, 1999; Grub, 1995). This separation gave start to a dual-system education (Hayward Benson, 1993), identifying students as either academic or vocational. By targeting non-college bound students, the first three Carl D. Perkins Acts continued the perceptions of many, believing vocational education was only for entry-level careers not requiring academic or post-secondary preparation.

The focus on technology found in many CTE courses is a route towards changing stereotypes and perceptions. Since the end of World War II, educational leaders have worked to integrate the curriculum of math, science, and language arts with career related education and opportunities, adapting programs that meet the needs of learners today. One prime example of this is the many courses that are part of a pre-engineering pathway through Project Lead the Way (PLTW).

Ongoing legislative support of CTE sends a positive message to the public (Indiana Chamber of Commerce (2017). *Indiana school counseling report*). Recent state and federal legislative initiatives attempting to increase high school graduation rates and prepare students for career opportunities have changed perceptions of CTE (Aliaga, Kotamraju, Stone III, 2012).

President Barack Obama, in 2009, showed support when he said "... Tonight I ask every American to commit to at least one year or more of higher education or career training. This can be a community college, a four-year school, vocational training, or an apprenticeship. But whatever the training may be, every American will need to get more than a high school diploma," ("Home American School Counselor Association (ASCA)," n.d.). President Obama's speech demonstrated the validity of CTE by asking Americans to focus on and provide resources for academic programs and pathways to prepare students for middle level jobs without receiving a bachelor's degree. He presented community colleges, vocational education programming, and apprenticeships as viable options for education beyond a high school diploma (Engberg & Gilbert, 2013).

CTE stereotypes based on historical roles and purposes still exist. It is hard to change a parent's perception of CTE who dreamed of sending their child to a four-year college, or who may hold the perception CTE is for "someone else's kids." However, a mainstreamed focus on CTE continues the emphasis on integrating skills and curriculum. As goals, missions, visions, and activities continue to be designed to be more in-line with the academics of our education system, perceptions are likely to evolve.

Indiana Counselors

Counselor roles throughout history have evolved for many of the same reasons as vocational education. Counseling programs in public education, often lacking a clear identity, continue to evolve in response to the changing social, political, and economic issues; changing needs of students; and in response to counselors knowing more about the interventions they can provide in their role (Gysbers, 2001; Herr, 2001; Morgan, Greenwaldt, & Gosselin, 2014; Paisley & Borders, 1995). Ongoing tensions exist around how much counselors are to help students

prepare for life in the workforce, to be college ready, or to deal with social/emotional needs ("Indiana school counseling research review (Indiana Chamber of Commerce (2017). *Indiana school counseling report*).

Counselor History

The first counselor programs appeared in the late 1800's with a connection to vocational education (Bain, 2012; Gysbers, 2001; Hughes & Karp, 2004; Paisley & Borders, 1995). School counseling and guidance, originally referred to as vocational guidance, was designed to help students transition from school to work, and help identify what type of jobs they were suited to take (Gysbers, 2001; Hughes & Karp, 2004).

During its early beginnings in public education, the vocational education tie to school counseling was clear; counselors worked with students to learn appropriate social behaviors, develop character, and assist in planning vocational futures. Roles then expanded to add educational decision making to vocational planning, before changing again with the special education movement to focus on at-risk services and programs supporting the development of all students (Gysbers, 2001; Hughes & Karp, 2004; Paisley & Borders, 1995).

Counselor roles continued to organize around changing structures in society. With strong ties to vocational education, the Industrial Revolution, military recruitments, The National Defense Education Act, and the Elementary and Secondary Education Act were influential (Paisley & Borders, 1995; Schenck, Anctil, Smith, & Dahir, 2012). The National Defense Education Act of 1958 had counselors focus on those students who would have a strong potential for attending college ("Indiana school counseling research review Indiana chamber of commerce foundation," 2017). The Act made funds available to prepare large numbers of school counselors to go into service (Gysbers, 2001; Schenck, Anctil, Smith, & Dahir, 2012; Paisley &

Borders, 1995). The pendulum, however, swung back towards a focus on vocational education with the passing of the Carl D. Perkins Vocational Education Act of 1984 and the following Perkins reauthorizations (Gysbers, 2001).

Counseling roles today sometimes lack a clearly defined unified purpose, but it is clear the purposes have changed over time (Gysbers, 2001; Morgan, Greenwaldt, & Gosselin, 2014). Current counseling program trends include comprehensive models with three domains of focus: academic, social and emotional, and career preparation. The school counselor no longer functions to just create schedules, help with college admissions, and provide help with students in trouble (Bain, 2012). Counselors are tasked with providing services equitably to students of all academic abilities, all socio-economic backgrounds, English language learners, and all other populations of students in the school; they serve them all (Bryan, Moore-Thomas, Day-Vines, & Holcomb-McCoy, 2011; Gysbers, 2001; Robinson & Roksa, 2016; Woods & Domina, 2014). Emphasis is placed on counselor behaviors being preventative, rather than responsive.

Evidence of assigning duties to counselors that were foreign to the guidance office was reported as early as 1923, and in 1936 the counselors were sometimes described as the handy men in schools doing the work others did not have time to do (Gysbers, 2001; Schenck, Anctil, Smith, & Dahir, 2012). A lack of control over activities and roles required of counselors during the school day is an ongoing issue expressed by those in the profession (McKillip, Rawls, & Barry, 2012; Paisley & Borders, 1995). Administrators with little or no counseling knowledge or background often make counseling assignments. Counselors' willingness to help as needed can be a strength and a weakness, because administrators may assign miscellaneous non-counselor duties. This can result in the neglect of more appropriate counseling duties (Whiston, 2002).

As society, education, careers, and administration change, counselor roles can sometimes feel like a moving target. The first organizational structure given to school counseling and guidance was a position given to teachers as a vocational counselor, which came with an assigned list of duties accompanying their regular teaching duties. In the 1930s, the introduction of pupil personnel work introduced a new structure and included attendance officers, visiting teachers, school nurses, school physicians, and vocational counselors. Then guidance and counseling became one of the services offered in schools. In the 1960s, the role became pupil personnel services (Gysbers, 2001; "Indiana school counseling research review Indiana chamber of commerce foundation," 2017). In the 1980s, pupil personnel services were renamed student services, and guidance continued to be an undefined program with counselors mainly performing supportive roles. An organizational structure with career, personal/social, and academic focus areas began to emerge into a comprehensive program. The pupil personnel services model, evolving since the 1920s has become a part of services provided by school counselors today (Gysbers, 2001; "Indiana school counseling research review Indiana chamber of commerce foundation,"2017).

Over the years, several models to organize and define the roles of counselors have been created. The concept of comprehensive counseling programs began in the 1970s with states, universities, and agencies designing programs. Eventually the work became a national model released in 2002 (Gysbers, 2013; Schenck, Anctil, Smith, & Dahir, 2012). The national model has incorporated pieces from previous models (Gysbers, 2001). The three domains are to be addressed with all students, in all grade levels, from all socio-economic backgrounds, and all educational levels (Gysbers & Henderson, 2001; Paisley and McMahon, 2001, Paisley& Border, 1995). The ASCA National Model is considered to be the most successful comprehensive

counseling model today, providing counselors with a framework that is structured for a comprehensive approach ("Indiana school counseling research review Indiana chamber of commerce foundation," 2017). ASCA (American School Counseling Association) is a professional organization made up of school counselors who are licensed/certified with the qualifications and skills to address the academic, personal/social, and career development needs of students (Bain, 2012; (Schenck, Anctil, Smith, & Dahir, 2012).

The ASCA model includes four key parts: foundation, delivery system, management system, and accountability approach ("Indiana school counseling research review Indiana chamber of commerce foundation," 2017). Each of the three domains of academic, personal/social, and career development needs also has standards assigned to them (Gysbers, 2013; Schenck, Anctil, Smith, & Dahir, 2012). Of those standards, three apply to career development, including the need for students to investigate the work world, to use strategies for future careers, and to see a relationship exists among their personal traits, education, training, and work (Gysbers, 2013; Schenck, Anctil, Smith, & Dahir, 2012).

School counselors' priorities should be aligned to the school's mission (Epstein & Van Voorhis (2010). Through counselors' help, students respond to changes in society because of their work with comprehensive guidance and counseling (Gysbers, 2001). Student success, which has multiple definitions, contains inter-connected issues. Teachers are tasked with supporting student academic achievement and counselors are in charge of coordinating efforts to support the remaining parts of the comprehensive counseling model (Bain, 2012). The needs of one school can be very different from the needs of another school and cultural issues may define strategies used by counselors (Bain, 2012). Finding a consistent description of duties can be

problematic. The challenge has always been how to address all students in all areas (Trolley, 2011). Counseling has evolved to include both remediation and prevention (Gysbers, 2013).

Career Counseling Time

It has become increasingly difficult for counselors to provide the amount of career guidance they desire (Schenck, Anctil, Smith, & Dahir, 2012). Career development was intended to be an equal domain with the other two domains in the ASCA model, but in reality there is a gap in the need for the guidance and the actual practice (Morgan, Greenwaldt, & Gosselin, 2014; Schenck, Anctil, Smith, & Dahir, 2012). A 2004 Osborn and Baggerly study, a national survey of school counselors in 2012, and a Public Agenda report *Can I Get a Little Advice Here.* (Schenck, Anctil, Smith, & Dahir, 2012) recognized this gap. Minimization of the career-counseling domain of comprehensive counseling results from the amount of accountability measures attached to it as compared with the other two domains (Morgan, Greenwaldt, & Gosselin, 2014). School counselors provide referrals, interventions, counseling, curriculum, and advocacy (ASCA, 2012). Mandates of standardized testing related to the No Child Left Behind Act of 2011 affected time for career counseling. Counselors have been assigned to testing and non-counseling roles, and teachers have limited counselor access to students due to their raising academic accountability issues (Morgan, Greenwaldt, & Gosselin, 2014; Schenck, Anctil, Smith, & Dahir, 2012).

Counselors often face high counselor to student ratios, making it difficult for students to access their counselor (Engberg & Gilbert, 2013; “Indiana school counseling research review Indiana chamber of commerce foundation,” 2017; McKillip, Rawls, & Barry, 2012). The most recent available figures from 2014-15 indicate that Indiana’s average counselor to student ratio was 1:634. At the elementary /intermediate level the ratio average was 1: 1,115, while at the

junior high the average was 1:462, and at the high school 1:365. Nationally, the recommended ratio is 1:250 (American School Counselor Association, 2017; Morgan, Greenwaldt, & Gosselin, 2014). Data gathered in 2012-13 showed Indiana as having the 10th highest ratio in the US at 1:541. (Indiana Department of Education, 2017).

Counselor Training

College leaders are facing a need to adjust counselor preparation programs to adapt to the needs of an ever-changing society, economy, and workforce. Studies have shown career development programs for counselors in training have been lacking in strength because of a deficit in advanced classes that focus on the topic (Lara, Kline, & Paulson, 2011; Morgan, Greenwalt, & Gosselin, 2014). These studies also reported, because of a lack of training, counselors lack high levels of confidence to provide career development counseling to students.

Counselor education preparation programs may need to expand to provide approaches and resources for career and college counseling (Curry & Bickmore, 2012; Morgan, Greenwalt, & Gosselin, 2014). During preservice counseling training, field experiences specifically designed with career counseling tasks could increase competencies and confidence. There is no one model used consistently by universities to train school counselors. Trolley (2011) discovered a lack of research exists to evaluate the adequacy of preparing school counselors for today's jobs. If poorly designed, school counselor programs have the potential to negatively influence students and schools (Bain, 2012).

A survey conducted by the National Center for Education Statistics in 2002 focused on guidance counseling services provided in public high schools. In responding to the survey, schools reported at what levels their programs emphasized four identified goals. The four goals were helping students plan and prepare for potential work roles following high school

graduation, helping students with their personal growth and development, helping students plan and prepare for postsecondary schooling, and helping students with their academic achievement in high school. The goal with the highest emphasis was student academic achievement with 48% of participants identifying it as the highest goal. Helping students plan and prepare for postsecondary school came in second in emphasis with 26 % reporting it as their most emphasized part of the program. Personal growth and development earned 17 % of the results. In fourth place with 8 % of the results was the emphasis to help students plan and prepare for work roles after high school (U.S. Department of Education, 2002). These survey results give added justification to this research study and the need study counselor training programs.

In summary, school guidance and counseling has had a variety of purposes and themes, often influenced by the varying political, economic, and social issues of the times (Gysbers, 2001; Schenck, Anctil, Smith, & Dahir, 2012). Contemporary issues have resulted in school counseling today being very different from its historical beginnings, though the core purpose will always be to help with the well-being of students (Bain, 2012). There is much to be learned from the past and implemented into today's comprehensive guidance (Gysbers, 2001), which is designed to serve all students regardless of race, gender, ethnicity, cultural background, sexual orientation, disability family structure, socioeconomic status, learning-ability level, or other special characteristics (Gysbers, 2001). The emphasis on career guidance from school counselors has fluctuated from being a major theme at times to being a minimal item on a long list of responsibilities (Schenck, Anctil, Smith, & Dahir, 2012). With a rapidly evolving workplace, there is value in providing student with strong academics and career knowledge and skills to be career ready at the end of their secondary education (Gysbers, 2013).

CTE in Indiana

CTE programming is growing throughout the United States; however, a unified approach across the states does not exist (Hall & Rogers, 2014). Each state has its own policies and ways to align secondary and postsecondary education, with various definitions of career pathways (Hughes & Karp, 2006). Though federal policy shifts with changes in administration, Indiana is building its own vision for CTE systems (Hughes & Karp, 2006).

Today's programming in Indiana is designed so CTE students grow academically and gain technical and employability skills. As a result, students receive opportunities to secure and keep a job, become knowledgeable about potential careers, and are able to start transitions to the workforce or postsecondary education. According to the Indiana Department of Education website, "Today's cutting-edge, rigorous and relevant Career and Technical Education (CTE) prepares youth and adults for a wide range of high-wage, high-skill, high-demand careers." The department has set forth a mission to provide the necessities to succeed in a postsecondary education setting and to find careers with financial independence.

Indiana has shown support of CTE at the state level through the creation of a career development law, looking to have all classrooms, K-12, provide student activities related to career readiness (Indiana career readiness report 2015 CTE and career data analysis, 2015). Two programs, Exploring College and Careers, and Preparing for College and Careers, offer middle and high school students a curriculum with the 16 Career Clusters established by the National Career Clusters Framework, career interest inventories, and exploration of strengths and interests that align to possible careers. Students can also go online to explore careers, interests, and skills with the Indiana Career Explorer (www.IndianaCareerExplorer.com), provided by the Indiana

Department of Workforce Development, the Indiana Department of Education, and the Indiana Commission for Higher Education.

The requirement for Indiana students in grade 6 is to start college and career planning as a part of the school experience. This early piece can include a variety of activities such as having classroom presenters from local businesses, or taking the classroom on a trip to tour local manufacturing sites, post-secondary education facilities, and other career venues in the area. Graduation requirements can be a barrier to the creation and application of pathways, including an uneven preparation for college, the lack of scheduling time for CTE electives, and the requirement for CTE students to take classes above the graduation requirements (Hughes & Karp, 2006). By grades 11 and 12 Indiana calls for more specific plans, including graduation plans to be reviewed on an annual basis by the students, their parents, and their high school counselor.

Indiana CTE districts receive Perkins allocations. Receiving this money requires at least 85% of Indiana's annual allocation go to local programs, with no more than 10% of the local funds determined by competitive grants. Indiana law IC-20-38-12 states that at least 60% of the local formula must go to secondary programs. In the 2016-17 school year, Indiana's Perkins allocation was over $25,000,000. Indiana requires CTE districts who receive Federal Perkins money to provide annually the number of students taking and passing the state's Technical Skills Attainment measures, including certifications, licenses, and dual credit final exams/end-of-course assessments identified for each College and Career pathway. The state requires the number of students taking the pathway assessments go up each year in each CTE district. How states review CTE programs at the secondary level varies, though all are required to monitor how standards are implemented through the Carl D. Perkins Career and Technical Education Act of

2006 (state of career technical education: An analysis of state CTE standards, 2013, www.doe.in.gov/cte).

The state of Indiana has seen participation and funding numbers increase in recent years. CTE enrollment in 2013 surpassed 200,000 for the first time. The number rose to 234,331 in 2016. Funding support also saw an increase going from just over $100,000,000 to almost $106,000,000 in those same years. In addition, industry credentials received by graduating students rose 48% in just two years, from 2012-2014. Students earn college credits as a part of the CTE programming, saving parents millions of dollars in tuition fees. Indiana's support for students in CTE programs comes through professional development for educators, creation of pathways, and offering leadership for CTE student organizations (http://www.doe.in.gov).

In Indiana, Annual Performance Reports include information on students enrolled in a career and technical program, including the number of students and the percentage of students earning a career and technical diploma at both the district and state levels ("How states are making career readiness count: A 2016 update," 2016).

Indiana is a state that has included career-focused indicators in their accountability systems. Schools can earn up to 100 points: number of students who passed AP exams + number who passed IB exams + number of dual college credits + number of industry certifications divided by the total number of cohort graduates' levels ("How states are making career readiness count: A 2016 update," 2016). In 2014, the rate of graduation for students who earned six or more CTE credits in a career area was higher than the state average. In fact, the 10 years prior to 2014 also found CTE concentrators with graduation rates above others.

Indiana has invested in CTE as leaders and policymakers develop plans to strengthen the economy of the state, supply businesses with well-prepared workers, and provide educational

and career opportunities. Promoting fiscal and programmatic investments in CTE supports CTE improvement at the secondary and postsecondary levels. In 2015, HB1194 gave the Indiana Career Council's Core 40 Subcommittee the job of recommending amendments to the Indiana diploma to ensure options for all students to attain a college or career pathway. The same year the state passed the biennial budget giving an increase from $450 to $500 per credit hour for high-wage/high-demand courses for secondary CTE programs. The high-demand/moderate-wage and moderate-demand/high-wage course funding increased from $375 to $450 per credit hour. The Department of Workforce Development received an allocation through the budget of $24,000,000 for CTE Innovation and Advancement program, with up to $5,000,000 for CTE performance grants each year.

Vocational education funding and guidance is deeply rooted in federal government involvement that originally separated it from academic work (Dougherty, 2016). Federal funding and programming is a start to CTE reform, but each state has an individual need to create their own plans and evaluate whether or not they are working. Showing support at the state level, Indiana has created definitions, funding, pathways, and laws specific to the state, and has its own initiatives to equip students for the workforce. CTE programs in the state have identified pathways to career clusters, allowing students to leave high school with industry certificates. The Indiana Works Councils made available over $4 million in grants for CTE related curriculum in an attempt to find innovative teaching ideas. A CTE Awareness grant also supports CTE awareness (Hall & Rogers, 2014). All doors to opportunity should be opened to students as they advance through secondary opportunities and prepare for postsecondary options ("Career technical education and advanced placement," 2013).

Programs of Study

Many decades of attempts to improve CTE opportunities have resulted in Programs of Study (POS). POS focuses on those students who are not likely to graduate from a 4-year college, as an ongoing attempt to reunite academics and vocational education. POS also intends to improve related perceptions formed when early legislative acts required their separation. Career pathways serve as a framework to coordinate people and resources to link education to industries. Through certifications, individuals can gain knowledge, become employed, and advance in their chosen career, by adding on to the education already attained. For proper application of this program, schools need to respond to the needs of businesses. This bridge between business and education requires both sides to do their part, meaning schools adequately prepare their students, while businesses respond with secure, good paying jobs (Bevins, Carter, Jones, Moye, & Ritz, 2012; Combs, 2015; Hyslop, 2008; Morelock, 2012; Scully-Russ, 2013).

According to the federal definition in the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV), the intention of POS is to prepare students by combining secondary and postsecondary components. The result should be coursework that challenges students with rigorous academic standards and have relevancy to career and technical education. The program opportunities may result in students attaining dual credit or industry credentials or certifications. Some participating students may even receive an associate or baccalaureate degree (Jimenez & Sargrad, 2018).

Directors of CTE programs have supported career clusters and career pathways as a way to align high school and postsecondary education options. Career clusters are groupings of occupation and broad industry, which include 16 nationally identified clusters. According to the National Career Pathways Network, a career pathway is a designed sequence of classes,

beginning in the ninth grade with the goal of obtaining an associate or baccalaureate degree, or industry based certification, or a career related license. Pathways rely on positive working relationships among secondary education, postsecondary education, and businesses.

In 2010, the US Department of Education's Office of Vocational and Adult education created a framework for POS to guide the implementation of its core pieces. The design includes 10 components, six more than found in the Perkins IV plan. These components provide details intended to support the creation and implementation of POS programs that work and to avoid problems that occurred in previous CTE programs. State and local planners set priority levels of the 10 framework items, which include legislation and policies, partnerships, professional development, accountability and evaluation systems, college and career readiness standards, course sequence, credit transfer agreements, guidance counseling and academic advisement, teaching and learning strategies, and technical skills assessments (Stipanovic, Lewis, & Stringfield, 2012).

In summary, POS evolved as educators grew in agreement that courses taught at the high school level for occupational training should prepare students for an economy continuously experiencing advancement in technology and the needs for postsecondary preparation in order to succeed. POS supports the blending of academic and technical standards in school, and increases accountability through measurable outcomes, such as receiving certification in a work related program, or receiving credits at the postsecondary level, or even receiving a degree. Constructivist John Dewey believed all education should have relevance to the lives and future of students by blending school and job training, aligning education with real life. Dewey’s ideals continue today with efforts by educators to create logical education and career pathways blending rigorous academic curriculum with practical career related experiences (Jocson, 2015).

21st Century Workforce and Skills

The vocational education focus on traditional programs like home economics and agriculture has shifted because of educational and technological growth, market demands, the needs of communities, and the constantly changing economy. The shift has been from an industrial based economy to one that is information based. For students to be prepared for the 21st century, schools must respond to the current challenges, identifying the economic needs of the area and potential jobs that have not been created yet, meaning students need to learn to be innovative (Bevins, Carter, Jones, Moye, & Ritz, 2012; Combs, 2015; Kotamraju and Merrill, 2012; Robles, 2012). As a result, schools are offering a variety of occupational programs.

A high school diploma is becoming increasingly important for those seeking to find a job earning enough pay to be in the middle class. Looking back to data from 1970, 74% of employees from the middle class had a high school diploma or less. The percentage dropped to 40% in 2007, with a projection to be around 33% in 2020 (Carnevale et al., 2011).

What can be done to ensure students are prepared to meet the demands? Researchers have found evidence to predict a lack of available workers with the skills needed to be successful at a job as baby boomers retire from the workforce (Bevins, Carter, Jones, Moye, & Ritz, 2012; Combs, 2015; Dumay & Rooney, 2011; Jenkins, 2011). As a result, CTE programs and the "New Vocationalism" movement have worked to align education at the secondary and postsecondary levels to teach skills wanted by employers to future employees (Benson, 1997; Grub, 1996).

Employees describe young adults as lacking in the skills to succeed in today's workforce. Business owners seek 21st century skills, such as critical thinking, problem solving, creativity and communication. The owners include the members of The Partnership for 21st Century

Skills, such as Apple, Cisco and Pearson (Hubbard & McDonald, 2014; Symonds, Schwartz, Ferguson, 2011). The term *skills gap* describes young adults who do not have the skills and work ethic necessary to find success with jobs paying middle-class wages. This gap is a growing complaint of companies and business organizations (Symonds, Schwartz, Ferguson, 2011). Due to this, businesses are less likely to hire a person with just a high school diploma.

Soft skills, sometimes referred to as 21st-century skills, include character traits, attitudes, and behaviors, which are intangible and personality specific. Soft skills determine one's strengths as a leader, and enhance a person's interactions, job performance, and career prospects. Soft skills are not limited to one's career choice/profession, are broadly applicable, and continually develop throughout one's life. Soft skills are employability skills that are transferrable to many jobs (Robles, 2012). In comparison, hard skills are what a person includes on a resume', such as levels of education, work experience, and level of expertise. Job skills such as typing, using software programs, and wiring electronics are examples of hard skills (Robles, 2012). Employers seek to find individuals who are able to use their hard and soft skills to complement each other. Some say people's hard skills will get them a job interview, but soft skills are what will get them hired and keep the job.

Employers recognize soft skills as an indicator of job performance, sometimes replacing traditional hard skills qualifications. This supports the need for an education that solely focuses on college readiness. It also provides supports for students to attain skills needed in the 21st century workforce, or to make the transition into adulthood successfully (Symonds, Schwartz, Ferguson, 2011). Educators are already trying to cover more curriculum than time allows, and asking them to cover more, such as a unit on soft skills can be a tough sell. One solution is to integrate the soft skills into already existing curriculum. It is difficult to assess the impact

teaching soft skills curriculum has had on students, which can make it difficult to get administrator support.

In summary, schools face pressures to supply industries with an educated workforce that meets their needs. As a result, linking traditional academic studies to needs of the 21st century workforce receives an increased focus. CTE, with a rich history in the development of the American workforce, has evolved in many ways in the last decade CTE is preparing students with skills that are relevant and employable, responding to the needs of employees where demand for skilled employees continues to grow (Indiana Department of Education, 2018; Dougherty, 2016). The Association of Career and Technical Education (2010), describes the growth of CTE "from a limited number of vocational programs available at the turn of the 20th century into a broad system that encompasses a variety of challenging field in diverse subject areas which are constantly evolving due to the changing global economy." (Lynch, 2009; "state of career technical education an analysis of state CTE standards," 2013). To meet the changing needs of economy, technology, and workforce, CTE will need to teach current and future skills, including hard and soft skills, necessary for success.

CHAPTER THREE

RESEARCH METHODS

Chapter Three presents the research methods and rationale used in this study. This chapter begins by stating the purpose of the study and the research questions. It continues with a section outlining the research design of the study, information related to the population and sample of respondents, the instrumentation used, data collection procedures, and data analysis. Marlon Thornburg receives credit for the development of most of the survey used. Dr. Marlon Thornburg, currently the vice president for Innovation and Business Initiatives at Coffeyville Community College in Coffeyville, Kansas gave permission to use his survey for this study. Dr. Thornburg received his doctoral degree from Walden University in 2016. His dissertation focused on perceptions of CTE held by counselors in the state of Kansas. In his research, Dr. Thornburg used a cross-sectional survey design to collect the data from counselors throughout the state. The survey contained questions related to their CTE knowledge levels, educational background, available counseling time, and perceptions of CTE programs. His research found a relationship between the knowledge levels and counseling time of Kansas counselors to their perceptions of CTE. He found no significant association between counselor educational backgrounds and perceptions of CTE. Educational institutions and economic development planners in the state may use the obtained information to target CTE recruitment strategies for counselors to guide students as Kansas addresses growing a skilled workforce.

In addition to his work at the college, Dr. Thornburg stays busy in education and community work. He received recognition as the 2018 Postsecondary Administrator of the Year for the Kansas Skills USA Chapter for his contribution and support of the program. His resume includes serving as Board Member for the Coffeyville Regional Medical Center Foundation; Board

Member for the Coffeyville Public School Foundation; Member of the CVR Energy Community Advisory Panel; and Volunteer for the Coffeyville Historical Society.

Purpose of the Study

The purpose of this study was threefold. The first purpose of this study was to describe demographics of the school counselor population in Indiana. Another purpose was to identify the relationships that exist between Indiana's middle and high school counselors' knowledge levels, self-assessed knowledge levels, educational backgrounds, and available counseling time with their perceptions of CTE initiatives and programs in Indiana. The last purpose of this study was to identify differences among middle and high school counselors' knowledge and self-assessed knowledge, as well as differences found with gender, years of counseling experience, years of teaching experience, size of student caseload, and number of students in school to counselor perceptions of CTE initiatives and programs in Indiana. A Qualtrics survey collected the data. One section of the survey measured counselors' actual knowledge about CTE programs, and another section asked counselors to self-assess their strength of that knowledge. The independent variables include high school counselor knowledge levels of Indiana CTE programming, educational backgrounds, and amount of available counseling time. The dependent variable is the Indiana counselor perception of CTE.

Research Questions

The research questions that guided this investigation include:

1. What are the differences between counselors' knowledge and counselors' self-assessed knowledge?

2. What are the relationships between counselors' knowledge levels and their perceptions about CTE programs and between counselors' self-assessed knowledge levels of CTE and their perceptions about CTE programs?

3. What is the relationship between counselors' educational backgrounds (e.g. attended a CTE program or traditional academic program) and their perceptions of CTE programs?

4. What is the relationship between the amount of time middle and high school career counselors have available for career counseling and their perceptions of CTE programs?

5. What are the differences when comparing the independent variables of gender, years of counseling and teaching experience, and number of students in the school, to counselor perceptions of CTE?

Research Design

The planned research is a quantitative approach that will include a survey. A quantitative research study, as described by Creswell (2009), involves an inquiry strategy to gather statistical data on a determined population to evaluate a theory. The study will provide data to test my hypothesis there is a relationship between what Indiana's middle and high school counselors know and have experienced with CTE, to how they perceive CTE programming options.

Surveys are probably the most common design of quantitative research (Aliaga & Gunderson, 2003). Surveys support the need for objectivity when working with collected quantitative data. The instrument uses a series of questions to collect data from all of the population (Gay, Mills, & Airasian, 2014). The use of a survey questionnaire comes with advantages and disadvantages. Advantages of a survey include familiarity of format to users, the ability to complete the work when and where it is convenient, and the freedom of time to think about responses. Disadvantages associated with this instrument may include a low response rate,

difficulty drawing conclusions, the possibility of a forced-choice, confusion on a question being asked, and skewed data (Aliaga & Gunderson, 2003; Conrad & Serlin, 2011; Gay, Mills, & Airasian, 2014). Figure 1 displays the alignment of the five research questions and the survey questions.

Figure 1

Corresponding Survey Items to Research Items

Research Questions	Corresponding Survey Items
1. What are the differences between counselors' knowledge and counselors' self-assessed knowledge?	**Survey Items: 1,2,3,4,5,6,7,8,9**
2. What are the relationships between counselors' knowledge levels and their perceptions about CTE programs and between counselors' self-assessed knowledge levels of CTE and their perceptions about CTE programs?	**Survey Items: 1,2,3,4,5,6,7,8,9,10,11,12, 13,14,15,16**
3. What is the relationship between counselors' educational backgrounds (e.g. attended a CTE program or traditional academic program) and their perceptions of CTE programs?	**Survey Items: 10, 12, 13,14,15,16,17,18,19,20,21,22**
4. What is the relationship between the amount of time middle and high school career counselors have available for career counseling and their perceptions of CTE programs?	**Survey Items: 10, 11, 12, 13,14,15, 26, 27, 28, 29, 30**
5. What are the differences when comparing the independent variables of gender, years of counseling and teaching experience, and number of students in the school, to counselor perceptions of CTE?	**Survey Items: 10,11,12,13,14,15,16,23,24,25,27,29**

Population and Sample

The following section outlines the selection of respondents in the study and their invitations to participate in the online survey. The *population* for the study includes individuals

with whom the researcher wants to generalize and make predictions about behavior patterns (Aliaga & Gunderson, 2002; Conrad & Serlin, 2011). The targeted population for this study is counselors working in middle and secondary public schools in the state of Indiana. The research will utilize volunteer sampling by asking counselors to participate in the study via email. The IDOE provided a listing of schools and counselors' email addresses, from which counselors received emails requesting their participation in the study.

According to Dr. Dillman, Regents Professor in the Department of Sociology at Washington State University and Deputy Director for Research and Development in the Social and Economic Sciences Research Center (SESRC) "there is no other method of collecting survey data that offers so much potential for so little cost" (Dillman, 2007). Dr. Dillman recognizes a number of advantages of web-based surveys over paper surveys including an almost complete elimination of costs, a reduction in implementation time, the simultaneous use of response data imported into data analysis programs once surveys are complete, and ease of reminders to non-respondents. The limitations cited by Dr. Dillman of web-based surveys include not everyone is connected, not all potential respondents are equally computer literate, and e-mail addresses may be difficult to obtain (Dillman, 2007).

Successful web-based surveys should include a shortened timeframe compared to traditional paper surveys, lasting 8-10 workdays or less. In addition to shortened time, the length of messages and the questionnaires should both be shorter with questions more simplified than in paper surveys (Dillman, 2007). According to Dillman, the proper scheduling framework should begin with an invitation pre-notification, followed three days later by the e-mailed survey. At one week and two weeks following the initial survey e-mail, an e-mail reminder is to be sent. At the conclusion of the survey a thank you e-mail should be sent (Dillman, 2007).

Instrumentation

An existing instrument (created my Marlon Thornburg in 2016), was found and validated for the research purposes of this study. However, minor adaptations were necessary. From the original survey designed by Dr. Thornburg, the removal of six items resulted from reliability issues. These are the same six survey questions removed by Dr. Thornburg following his statistical analysis of the collected responses. The statistics on reliability for the survey are post hoc after the removal of the items. Cronbach's Inter-Item alpha scores reported reliability scores for the survey. These ranged from .517 for counselors' perception of CTE to .840 for Counselors' Perceived Knowledge, with an average of .750. Thornburg used the Delphi method and statistical checks to validate survey items. The design of the Delphi method reaches a group consensus among respondents who share a common expertise. This technique is appropriate when researching to find what could or what should be, and is based on the belief that structured groups will make more accurate decisions than unstructured groups (Hasson, Keeney, & McKenna, 2000; Hsu & Stanford, 2007).

The survey consists of five sections. Section A, the modified section, has three multiple-choice questions focusing on knowledge levels of Indiana's CTE programs and initiatives. Question one of Thornburg's survey asked about details related to tuition payments made of students in a CTE course at a Community or Technical College, which were adapted to align with Indiana. The replacement of references from Kansas to Indiana resulted in changes to questions two and three. These questions include counselor understanding of CTE certifications and financial incentives.

Section B has five Likert scale questions with a focus on counselor's self-assessed knowledge of CTE. Thornburg wrote the perceived knowledge questions (section B) to compare

with counselors' actual knowledge (section A) to see if there was consistency in the two areas. Respondents will assign a value of one (poor) to five (excellent) according to their knowledge of career pathways in the state, their knowledge of skill requirements of CTE careers, the quality of CTE information they are able to provide students, and their knowledge of current workforce needs in the state and the community.

Section C uses Likert scale questions to collect information on counselors' perceptions of CTE. This section resulted from Thornburg's study of workforce skill shortages, the retirement of baby boomers, and the roles counselors play in career counseling. Questions assess a counselor's perceptions of CTE programs and its incorporation into the high school curricula. Respondents will assign a value of one (poor) to five (excellent) on their view of CTE to serve employment needs, value of certifications for future employment, value to at risk students, when to expose students to CTE programming, CTE and academics, CTE and parental support, and time counselors have available to expose students to CTE with counseling.

Section D has seven questions of varying styles to gather information on the educational backgrounds of the survey respondents. Questions will include the counselor's level of education (bachelors, masters, education specialist, doctorate), the type of college attended (community, technical, four-year), personal participation in CTE programs as a student, focus of study on CTE in college, area of teaching experience (academic, CTE, or both), and college major(s).

Section E uses eight check mark style questions to collect respondent demographics. Personal demographic information collected the respondents' gender, years of counseling experience, and years of teaching experience. Job related demographic information included full vs. part time work status, the number of students currently being counseled, the amount (in

hours) of face-to-face contact with each student per school year, the number of students enrolled in the school, and additional job responsibilities of the respondent. I analyzed results to determine whether the demographic variables have any relationship to the knowledge levels or actions of the surveyed counselors. Appendix C includes the survey questions in their entirety.

This research includes both independent variables, those that cause, influence, or affect the outcome, and dependent variables, the outcomes or results of the independent variables (Creswell, 2009). The independent variables are Indiana middle and high school counselor's knowledge levels related to CTE programming. The dependent variable in the study was counselor perceptions of CTE initiatives and programming.

To help with the validation process for the original survey, a team of three experts participated from the field of CTE in Kansas, the focus state of the research. This team served to review and modify the survey. The criteria used by Thornburg in the selection of this team included years in education, level of expertise related to CTE, and current education positions. To add to the balance of experts serving in the validation process, one expert from a public school, one from a community college, and one from the Kansas Board of Regents completed the group.

Data Collection Procedures

I used questions answered through electronic surveys by Indiana's middle and high school counselors to assess counselor knowledge levels and perceptions related to CTE. Qualtrics, a software program available through Ball State University, was used for the research. Qualtirics software was the tool for creating the surveys, gathering results, and generating reports.

Data collection began in January of 2019. The selection of this time of the year for the

survey was selected as the starting point because of the nature of school calendars and the likelihood of respondent availability. Recruitment letters to encourage participation in the survey were emailed and included participation information. Counselors who did not respond to the survey received a series of follow up emails encouraging participation.

Participation in the research was voluntary with no compensation. To be eligible for participation, a respondent needed to be an employed counselor in a middle or high school in Indiana. Respondent invites provided an opportunity for counselors to consent/not consent to the survey after reading the recruitment letter. All data collected was only available to myself and my support team and is stored on my password protected computer. No identifying information, such as names, was collected or used in any presentation of data. Within seven years after the completion of the study the collected data will be deleted.

Data Analysis

After collecting the data, I put all that information from the Qualtrics program into SPSS format. Surveys submitted with missing data were removed. The results are presented as both descriptive and inferential statics as described in the next section.

Descriptive Statistics

Descriptive statistics capture the characteristics of the respondents in my study. I calculated the means, standard deviations, frequencies, and percentages to describe my sample. Demographics described include: gender, years of counseling and teaching experience, full versus part time positions, number of students in caseload, amount of face-to-face time with students, number of students in the school, and whether or not there are additional job responsibilities with the position. Descriptive statistics also summarize response rates.

Inferential statistics primarily served to answer my research questions, employing a variety of statistical operations to analyze the data. There are three constructs on the survey, arranged by sections, with like concepts grouped together. To complete a comprehensive inferential analysis of the data, I analyzed the means for each individual item and for each separate construct. After finding the mean for each item, the construct mean was found for each section. Each section of the survey focuses on one construct, with six to nine questions in each section. The constructs are: (a) career counselor's knowledge level of CTE, (b) counselor's self-assessed knowledge level, and (c) counselor perceptions of CTE.

Inferential Statistics

Dr. Kianre Eouanzoui, a statistician with Ball State University, served as a research design consultant for this study. The creation of the survey and the data collection occurred through Qualtrics, a secure software program. A variety of statistical operations analyzed the data. The four sections of the survey are actual knowledge level, self-assessed knowledge level, educational background, and available counseling time. The data from each section analyzed possible relationships between these independent variables, including the differences among the independent variables in the demographics, and the dependent variable of CTE perceptions.

To measure relationships, I considered three popular measurements of correlation including Pearson's coefficient (r), Spearman's rho coefficient (r_s), and Kendall's tau coefficient (τ). Spearman's correlation, a non-parametric test, measured the strength and direction of association between variables when investigating relationships (Hauke & Kossowski, 2011). A perfect correlation is possible at r = 1 (positive correlation) and r = -1 (negative correlation). The positive sign means that as one variable increases, so does the other, and the negative sign indicates that as one variable goes up, the other goes down (Murray, 2013). An r_s symbolizes a

Spearman correlation. The two assumptions data need to meet for a valid result are to have ordinal, interval, or ratio variables and to have a monotonic relationship between the variables. The Spearman correlation found statistical significance, but does not have any connection to the strength of the relationship; however, the Spearman correlation still reflects the percentage chance that the strength of the relationship happened by chance or not. Spearman's correlation is favorable over Pearson's correlation when the distribution of data makes Pearson's measure misleading and when the relationship between variables is not linear (Hauke & Kossowski, 2011).

All five research questions investigate differences between two or more variables. I analyzed the differences between middle and high school counselors' knowledge levels of CTE initiatives and their perceptions of CTE programs in question one. Both variables are continuous variables. I plotted the middle and high school counselors' knowledge data against their perceptions data to select the appropriate correlation model. Question two analyzed the differences of middle and high school counselors' educational backgrounds and their perceptions of CTE programs. I ran a one-way ANOVA. Question three investigated the differences between the amount of time middle and high school counselors have available for career counseling and their perceptions of CTE programs. Question four investigated the differences among the independent variables of counselor knowledge levels of Indiana CTE programming, educational backgrounds, amount of available counseling time, gender, years of counseling and teaching experience, full vs part time positions, number of students in caseload, amount of face-to-face time with students, number of students in the school, and additional job responsibilities. ANOVA assessed those differences when there were three or more variables. The use of a T-test occurred when there were only two variables, such as gender with male compared to female. I

plotted the amount of available career counseling time against perceptions data to choose the appropriate correlation method.

Summary

Chapter Three focused on the research methods of this study, including its purpose, research questions, research design, population and sample, instrumentation, and data collection and analysis. I collected quantitative information from middle and high school counselors in public schools throughout Indiana to address the stated research questions of the study. An electronic survey was the instrument used to gather data from respondents. Credit goes to Marlon Thornburg for creating and granting permission (see Appendix B) to use a survey he designed and used in Kansas, with modifications for Indiana specific questions. Chapter Four will report the detailed results of the analyzed quantitative data from the research.

CHAPTER FOUR

RESULTS

This chapter presents the analysis of the five research questions designed to learn more about how Indiana's middle and high school counselors perceive Career and Technical Education (CTE). This chapter first presents a review of the purpose of the study, research questions, research design, and data collection procedures. Next, the chapter presents data analysis information including both descriptive and inferential statistics. The descriptive section includes demographic characteristics and educational backgrounds of those who participated in the survey. The inferential statistics section describes the results of the counselors' responses to each of the research questions. Chapter Four will end with a summary.

Purpose of the Study

The purpose of this study was threefold. The first purpose of this study was to describe demographics of the school counselor population in Indiana. Another purpose was to identify the relationships that exist between Indiana's middle and high school counselors' knowledge levels, self-assessed knowledge levels, educational backgrounds, and available counseling time with their perceptions of CTE initiatives and programs in Indiana. The last purpose of this study was to identify differences among middle and high school counselors' knowledge and self-assessed knowledge, as well as differences found with gender, years of counseling experience, years of teaching experience, size of student caseload, and number of students in school to counselor perceptions of CTE initiatives and programs in Indiana. A Qualtrics survey collected data. One section of the survey measured counselors' actual knowledge about CTE programs, and another section asked counselors to self-assess their strength of that knowledge. The independent variables include high school counselor knowledge levels of Indiana CTE

programming, educational backgrounds, and amount of available counseling time. The dependent variable is the Indiana counselor perception of CTE.

Research Questions

The research questions that guided this investigation include:

1. What are the differences between counselors' knowledge and counselors' self-assessed knowledge?
2. What are the relationships between counselors' knowledge levels and their perceptions about CTE programs and between counselors' self-assessed knowledge levels of CTE and their perceptions about CTE programs?
3. What is the relationship between counselors' educational backgrounds (e.g. attended a CTE program or traditional academic program) and their perceptions of CTE programs?
4. What is the relationship between the amount of time middle and high school career counselors have available for career counseling and their perceptions of CTE programs?
5. What are the differences when comparing the independent variables of gender, years of counseling and teaching experience, and number of students in the school, to counselor perceptions of CTE?

Data Analysis

Two subsections appear in this section. The first section includes descriptive statistics. These statistics primarily describe the response rate, procedures, and information related to the sample group. The second section includes inferential statistics, which are used to answer the research questions. Information appears in the sequential order of the research questions along with the statistical findings of each question.

Descriptive Statistics

Descriptive statistics report counselor demographics, as well as to discuss trends when no inferential findings existed. The Qualtrics survey consisted of one section to measure counselors' actual knowledge about CTE programs; one section to self-assess the strength of that knowledge; one section to measure perceptions; one section for educational backgrounds; and one section for respondent demographics, which summarized the descriptive statistical data related to survey participation and response rate and participant demographics. The statistical tools used include percentages and frequencies.

Recruitment and participation process. The recruitment process began in December of 2018 with a request to the Indiana Department of Education to provide a list of email addresses for middle and high school counselors in public schools in the state of Indiana. The provided list contained 27,401 emails. In an attempt to get an accurate list matching the criteria of the study, I removed all emails belonging to people with job descriptions other than counselor, including principals, deans of students, directors of programs, classroom teachers, and superintendents. Following the first edit, 1,669 email addresses remained designated as counselor emails. Of that group, 472 were designated as elementary (K-6), leaving 1,197 email addresses. The removal of emails belonging to schools that did not meet the criteria of being public schools (96) reduced the list to 1,101.

I sent the first invitation to participate in the emailed survey through Qualtrics on February 6, 2019. From the email list provided by the Indiana Department of Education, 66 emails bounced back as undeliverable, leaving 1,035 emails. Follow up emails occurred on February 14, 2019 and February 21, 2019 to those who had not responded to the invite. Emails

were sent according to the timing and verbiage recommended by Dillman (2007). The survey closed on February 28, 2019.

Response rate. Of the 1,035 middle and high school public school counselors invited to participate, 303 (29.2%) responded to the survey. A total of 182 counselors fully completed the survey, resulting in a response rate of 17.6%. The incomplete surveys ranged in participation from answering one question (25 respondents) to answering 30 (three respondents.) The analysis of data only included the complete surveys.

I planned the timing of the survey based on the nature of school calendars and the likelihood of respondent availability following Christmas vacation. Participation in the research was voluntary with no compensation. To be eligible for participation, a respondent needed to be an employed counselor in a public middle or high school in Indiana.

Participant demographics. The Qualtrics survey collected specific demographic data to describe the counselors participating in the study including gender, number of years counseling, number of years teaching, full versus part time job status, number of students in the school and in a caseload, amount in hours of face-to-face time with students, and additional job responsibilities. SPSS software and Qualtrics allowed me to examine descriptive statistics. Table 1 presents demographic data for participating counselors.

Table 1

Respondent Demographics

Demographic	N	%
Gender		
Male	41	23.4%
Female	134	76.6%
Years of Counseling Experience		
0 to 3 years	13	7.4%
3+ to 6 years	25	14.3%
6+ to 8 years	16	9.1%
8+ to 10 years	13	7.4%
10+ years	108	61.7%
Years of Teaching Experience		
0 to 3 years	88	50.6%
3+ to 6 years	14	8.0%
6+ to 8 years	9	5.2%
8+ to 10 years	8	4.5%
10+ years	55	31.3%
Full vs. Part Time Positions		
Full-time	170	96.6%
Part-time	1	.6%
Not currently working as a counselor	4	2.3%
Number of Students in Caseload		
Less than 100 students	6	3.4%
101-300 students	46	26.1%
301-500 students	94	53.4%
Over 500 students	29	16.5%
Amount of Face to Face Time with Students		
Less than 5 hours	131	74.4%
5+ to 10 hours	31	17.6%
10+ to 15 hours	5	2.8%
Over 15 hours	8	4.5%
Number of Students in the School		
<250	5	2.8%
251-500	44	25.0%
501-1,000	65	36.9%
>1,000	60	34.1%
Additional Job Responsibilities		
Yes	169	96.0%
No	7	4.0%

Gender and experience. Participants were predominately female (77%, *n* = 134). The majority were veteran counselors with 10 or more years in their position (62%, *n* = 108), and with limited background (0 to 3 years) teaching in a classroom 51% (*n* = 88). Overwhelmingly,

counselors in the state of Indiana who participated in the survey are working full-time (97%, *n* = 170).

School, caseload sizes, and face-to-face opportunities. Demographic data, displayed in Table 2, relates to the job details of student enrollment, caseloads, and how much face-to-face time existed for counselors and their assigned students. The majority of respondents experience less than five hours of face-to-face time with their assigned students (75%, *n* = 129) and have been assigned to work with 301-500 (53%, *n* = 94) students on an annual basis.

Table 2

Cross Tabulation of Face-to-Face Contact, Caseload Size, School Enrollment

Face-to-Face Time	How many students attend your school?			
	<250	251-500	501-1,000	>1,000
Less than 5 hours	1	31	49	49
5+ to 10 hours	1	9	14	7
10+ to 15 hours	0	2	2	1
Over 15 hours	3	2	0	3
Caseload Size	**How many students attend your school?**			
	<250	251-500	501-1,000	>1,000
<100	1	2	1	1
101-300	5	12	21	10
301-500	0	29	28	15
>500	0	2	15	12

Sources of CTE knowledge. Counselors need to have knowledge of CTE to give students factual advice on the topic. Question 31 asked respondents to indicate in what way they attained their knowledge of CTE, selecting all applicable options from the provided list of nine. Evidence displayed in Table 3 shows that having toured or observed students in a CTE program resulted in the most responses (74.7%). Experiences attained through completing CTE in high school (4.5%) and completing CTE in college (5.6%) show very few respondents participated in CTE educational pathways as students. The amount of knowledge on CTE topics may influence how much information counselors are able to provide to students.

Table 3

Sources of CTE Knowledge

Sources of CTE Knowledge	%
I completed a CTE in high school.	4.5%
I completed a CTE program in college.	5.6%
A family member or someone I know personally completed a CTE program.	25.8%
I have read materials about CTE programming.	67.4%
My school currently provides CTE programming.	68.5%
I have toured or observed students in a CTE program.	74.7%
My school administration has discussed CTE programming for our students.	52.2%
I have toured area industry and/or discussed CTE programs with community members.	59.6%
I have attended state meetings and/or conferences about CTE initiatives.	40.4%

Table 4

Additional Job Responsibilities

Job Category	Frequency
Testing (ISTEP, ILEARN, SAT, ACT, PSAT, ASVAB, etc.)	68
Scheduling (programming, master schedule, student schedule, etc.)	49
Grants	0
CTE (internships, career center, industry tours, etc.)	6
Duties (recess, cafeteria, door, substitute, sponsorships, committees, etc.)	32
CCR Programming	1
RTI/504/IEP/McKinney-Vento	17
Awards (National Honor society, graduation, etc.)	6
Administrative duties (state reporting, department chair, free and reduced lunch program, discipline, etc.)	16
Student enrollment (registration, tours, orientation)	8
NCAA	3
Financials with FAFSA and scholarships (including 21st Century Scholars, Bridge Scholars, etc.)	12
Drug testing	0
Resources development	3
Community partnerships	4
Academic counseling (college advising, graduation pathway tracking, grades, diplomas, transcripts, credit recovery, etc.)	35
Social/emotional counseling (crisis, mentor programs, small/large groups, suicide intervention, bullying, etc.)	52
ESL/ELL	3
Curriculum (dual credit, AP, IB, high ability, etc.)	17
Attendance	7

Additional job responsibilities. To collect data for additional responsibilities**,** respondents participated in an open-ended opportunity to list the additional jobs, resulting in an extensive list. Analysis included categorizing additional jobs by themes, into 20 categories. Table 4 displays those categories and the response rate for each. The category of testing had the highest frequency with 68 counselors saying it is a part of their job. Schedules followed testing with 49 indicating they have a part in creating schedules in some way.

Inferential Data Analysis

The inferential statistics section answered the research questions using collected quantitative data and a series of statistical tests to assess the strength of relationships and differences between variables in the study. This section is aligned in same order as the five research questions. The survey consisted of the three constructs of career counselors' knowledge level of CTE, counselors' self-assessed knowledge level of CTE, and counselors' perceptions of CTE.

Research Question 1: What are the differences between counselors' knowledge and counselors' self-assessed knowledge?

I ran a paired samples t-test to test whether the means of the two metric variables are equal to answer research question one. Both variables of actual knowledge and self-assessed knowledge were measured on the same counselors. The two scores are continuous and were paired. The results show the difference is not significant in the scores for actual knowledge ($M = 2.88$, $SD = 0.98$) and self-assessed knowledge ($M = 3.04$, $SD = 0.73$); $t(174) = -1.90$ $p = .059$). These results suggest the likelihood that a difference between the two variables is by chance and not something else because the p-value was larger than α. Table 5 shows the results.

Verification of assumptions occurred prior to the paired t-test. I assumed the results are from a randomly selected sample. A skewness index of .024 and a Kurtosis index of -0.19 have absolute values of less than .80 and 2.00 respectively, suggesting a normal shape. The non-significance of a Shapiro-Wilk test for normality, the shape of the produced histogram, and the closeness of points on the Q-Q plot supported this finding. The box plot showed no outliers exist.

Table 5

Paired Samples Test

	Paired Differences Mean	T	Df	Sig. (2 tailed)
Assessed and Self-Assessed Knowledge	-.1600	-1.901	174	.059

*Statistical significance P < .05

Research Question 2: **What are the relationships between counselors' knowledge levels and their perceptions about CTE programs and between counselors' self-assessed knowledge levels of CTE and their perceptions about CTE programs?**

To answer research question two, the relationships between counselors' knowledge levels of CTE initiatives and their perceptions of CTE were analyzed, and then their self-assessed knowledge levels of CTE programs and their perceptions about CTE programs were analyzed. SPSS software was used with data from sections A (knowledge), B (self-assessed knowledge), and C (perceptions) of the survey. Each of the three measures had a different number of questions on the survey, so I used means, not sums. The average score for knowledge was 2.88, for self-assessed knowledge it was 3.04, and for perceptions the average was 3.45

A Spearman's correlation coefficient measured the strength of the monotonic relationship between paired data. The Spearman's Rho correlation that was run to determine the relationship between counselors' knowledge levels and their perceptions of CTE was not statistically significant ($r_s = .09, p > .05$).

I ran the Spearman's correlation, shown in Table 6, to determine the relationship between counselors' self-assessed knowledge levels and their perceptions of CTE. The results show a very weak positive monotonic correlation $r_s = (173) = 0.17, p > .05$). The result of $p = .03$ indicates a statistically significant difference ($p < .05$). Therefore, even though it is weak, there is some relationship between perceived knowledge levels and perceptions of CTE, and as one's perceived knowledge level goes up, so does counselors' positive perceptions of CTE.

The interpretation of this statistical measure is similar to that of Pearson's correlation coefficient r but is a nonparametric statistic. The closer to + or – 1 the stronger the relationship between the paired data. The assumptions of data for using Spearman's correlation, specifically having monotonically related ordinal data, were met. *Monotonic* means that as one variable increases, in this case self-assessed knowledge, so does the other, perceptions, (positive) or that as one variable goes down the other goes down (negative) (Murray, 2013).

Table 6

Results of Spearman's Rho Correlation Comparing Knowledge Levels and Self-Assessed Knowledge Levels to Perceptions

			Perceptions Recoded	Knowledge Level Recoded	Self-Assessed Recoded
Spearman's rho	Perceptions recoded	Correlation Coefficient	1.00	.09	.17*
		Sig. (2-tailed)	.	.22	.03
		N	175	175	175
	Self-assessed recoded	Correlation Coefficient	.17*	.11	1.00
		Sig. (2-tailed)	.03	.14	.
		N	175	175	175

* Correlation is significant at the 0.05 level (2-tailed).

Research Question 3: What is the relationship between counselors' educational backgrounds (e.g. attended a CTE program or traditional academic program) and their perceptions of CTE programs?

I analyzed the different educational backgrounds of counselors and their perceptions of CTE programs. I used data from section C of the survey focusing on perceptions and data from section D with questions of varying styles related to educational backgrounds were used. Section D from the survey, *Educational Background*s, questions focused on the highest level of education attained, type of college(s) attended, whether or not the counselor studied CTE in college, whether or not the counselor has experience teaching CTE programs, and majors for undergrad and graduate degrees.

Heavily skewed results for survey questions in section D, *Educational Backgrounds* exist, as a high majority of respondents selected the same option from the answer choices provided. For example, of the 175 respondents, 160 (91%) indicated they did not study CTE in college. The strongest set of skewed data belongs to the type of post-secondary institution attended, with 100% of the respondents indicating they attended a four-year college or

university, meaning none attended a technical school/college or a community/junior college. An attempt at inferential analysis would be meaningless due to the skewed results. As a result, I chose descriptive narration as the appropriate analysis over an inferential analysis with the collected data.

Due to the skewed data, it is not possible to determine a relationship between educational backgrounds and perceptions. What was discovered is the existence of strong consistencies within the sample. By far, as provided with details in the following paragraph, counselors in Indiana attend four-year colleges or universities, do not have experience studying or teaching CTE, did not major in education for their Bachelor's degree, and majored in counseling and guidance for their Master's degree. This means counselors in the state of Indiana lack background experiences in CTE, which could influence their ability to provide students with CTE guidance. This void in experience in an area that is a part of the job of counselors will be covered in more depth in Chapter Five.

Question 19 in section D asked counselors if they studied in a CTE program area (e.g. agriculture, automotive, electrical, construction, computer graphics, nursing, etc.) while in college. To that question the majority, 91% (n = 160) responded with no. Question 20 from that same section asked counselors if they have experience teaching CTE courses. Again, the majority responded with a no (95%, n = 167). Question 21 asked counselors for their major when obtaining their Bachelor's degree. The two options given were education and other, with 63% (n = 110) selecting other. The following question asked for their major when obtaining their Master's degree. The two options given were counseling and guidance, and other, with 94% (n = 164) selecting counseling and guidance.

Research Question 4: What is the relationship between the amount of time middle and high school career counselors have available for career counseling and their perceptions of CTE programs?

Two Spearman Rho correlations were run to determine if there were any relationships between counselors' perceptions of CTE and the amount of face-to-face time they have with students, and counselors' perceptions of CTE and the number of students on their assigned caseload. The first two-tailed test indicated no statistical significance for the amount of time counselors see students face-to-face and perceptions of CTE ($r_s = 0.07$, $p > .05$). The second test, also found no statistical level of significance between a counselors' perception of CTE to the number of students in an assigned caseload ($r_s = 0.01$, $p > .05$).

Research Question 5: What are the differences when comparing the independent variables of gender, years of counseling and teaching experience, and number of students in the school, to counselor perception of CTE?

Question five investigated the differences among the independent variables of gender, years of counseling and teaching experience, number of students in caseload, number of students in the school, and additional job responsibilities. A one-way ANOVA tested each independent variable to be consistent. In each case, the Levene's test showed homogeneity. In each of the one-way ANOVAs, the outcomes indicated no levels of significance. A brief reference to results occur in the next paragraph.

The first set of one-way ANOVAs, which included a comparison of the independent variable of counselors' gender (male, female, other) with their perceptions of CTE, proved to have no statistically significant results. [$F (1, 173) = 0.129$, $p = 0.720$]. Next, a one-way ANOVA was run using data from the indicated the number of years of experience counselors

have had in their counseling role. The interval choices on the Qualtrics survey included 0 to 3 years (n = 13), 3+ to 6 years (n = 25), 6+ to 8 years (n = 16), 8+ to 10 years (n = 13), 10+ years (n = 108). No level of significance was found [F (4, 170) = .450, p = 0.772] in comparing the differences among these variables. Data from counselor years of teaching experience and their perceptions of CTE were compared and showed no significant differences with [F (4, 169) = 0.748, p = 0.560]. Counselors selected from the options of 0 to 3 years (n = 88), 3+ to 6 years (n = 14), 6+ to 8 years (n = 9), 8+ to 10 years (n = 8), 10+ years (n = 55). Finally, counselor caseload was the variable used to compare with counselors' levels of perception of CTE. The majority (n = 94, 54%) selected 301 – 500 students and the option with the smallest selection was less than 100 students (n = 6, 3%). The results indicated no significant difference with F (3, 171) = .064, p = 0.979.

Summary

This chapter reported results of the quantitative research. I chose an electronic survey to increase ease of response, and thus increase the participation rate. The reader is better able to understand the data through the presentation of both descriptive and inferential statistical information.

Research question one results suggest there is no difference between actual CTE knowledge and perceived CTE knowledge of counselors. The reduction from six to three in survey questions related to the knowledge section (based on committee recommendations) may have influenced the results of this question and will be discussed in more detail in Chapter Five.

Both parts of research question two were analyzed with a Spearman's Rho correlation. The relationship between counselors' knowledge levels and their perceptions of CTE, showed no statistical significance. The same process determined the relationship between counselors' self-

assessed knowledge levels and their perceptions of CTE is a very weak positive monotonic correlation, meaning that as the level of self-assessed knowledge on issues related to CTE increased so does the individual's perception of CTE.

Data from the questions related to research question three for the relationship of counselors' educational backgrounds and perceptions of CTE came back very heavily distributed into single categories from the answer choices provided showing very strong consistencies among the respondents, each of which indicated a lack of CTE experience. Due to the skewed data, descriptive narrations were provided to share the results.

Research question four, the relationship between the amount of time for career counseling and perceptions involved two separate analyses. The first analysis found no statistical significance for the amount of time counselors see students face-to-face and their perceptions of CTE. The second also found no statistical level of significance between a counselors' perception of CTE to the number of students in an assigned caseload.

A final finding of the study came from one-way ANOVA tests run to answer research question five. The data presented did not reveal a difference between counselor gender, years of counseling, years of teaching experience, number of students in a caseload, number of students in a school, their additional job responsibilities and their perceptions of CTE.

A summary of the conclusions drawn from the data presented in this chapter are presented in Chapter Five, as well as a review of the problem and the methodology used. Implications for action and recommendations for further research will be presented to add more detail, as well as recommendations for further research.

CHAPTER FIVE

SUMMARY OF THE STUDY

This chapter begins with an overview of the problem, the purpose statement, the five research questions, methodology of the study, and major findings based on the results presented in Chapter Four. Also provided are findings related to the literature study, surprises that occurred, limitations of the study, and conclusions. Chapter Five ends with implications for action, recommendations for research in the future, and concluding remarks.

Overview of the Problem

School counseling is a demanding profession. The roles of middle and high school counselors continue to grow and evolve (Gysbers, 2001; Herr, 2001; Morgan, Greenwaldt, & Gosselin, 2014; Paisley & Borders, 1995) and their roles are becoming increasingly important as high school graduation requirements continue to change. Professional literature is full of references on how school counselors should provide comprehensive student support (American School Counselor Association, 2017). Students are not all on the same pathway and each student is tasked to find the path best suited for their individual skills, interests, and abilities.

The role of today's school counselor is to execute efforts to address each student's academic, personal/social, and career development needs (American School Counselor Association, 2017). In addition, a list of jobs to be done by a counselor is long and involved, sometimes including extra duties such as administrative support or discipline (ASCA, 2012). This wide list of responsibilities leads to a need to perform continual assessments of priorities in their work to determine areas of focus.

Like counseling programs, CTE programs have also undergone major changes compared to those of generations ago. Historically CTE, previously called vocational education, did not

serve the same purposes as it does today. Strongly held beliefs that vocational education was for special education students, students with behavioral problems, and other subgroups have made it difficult for CTE to be recognized for its value in today's society (Dougherty, 2016; Indiana Department of Education, 2018; Lynch, 2009). These perceptions of CTE could affect counselor advice and recommendations provided to students and parents in Indiana. CTE is currently emerging as an option for education reform that equips high school graduates with the necessary skills to succeed in post-secondary education and the workforce (Bozick & Dalton, 2013; Dougherty, 2016; Gentry, Peters & Mann, 2007; Hughes & Karp, 2006; Jimenez & Sargrad, 2018; Mukuni & Price, 2016; Stern, 2010).

CTE programming provides students with academic, technical, and employability skills, with the intent of preparing students with the ability to adjust and adapt as needed for career success following graduation from secondary or postsecondary education (Bevins, Carter, Jones, Moye, & Ritz, 2012; Gentry, Peters, & Mann, 2007; Hughes & Karp, 2006; Mukuni & Price, 2016; Stern, 2010). In fact, high school students who have taken three or more CTE courses in the same focus field are more likely to graduate than their peers and are better prepared for future studies (Jimenez & Sargrad, 2018). CTE programs provide the opportunity to graduate from high school prepared for the workforce with industry certifications, licenses, postsecondary certificates, or degrees (Indiana Department of Education, 2018; Jimenez & Sargrad, 2018; Office of career, technical, and adult education (OCTAE), 20).

A review of professional literature revealed an absence of data related to Indiana school counselors' knowledge and value of CTE. Are middle and high school counselors in the state providing comprehensive, up-to-date, accurate information to all students as they select their path of study? Students, parents, and counselors each have roles in the selection of coursework,

and information and guidance coming from counselors may have substantial impact in guiding students' future educational and career plans.

Purpose of the Study

The purpose of this study was threefold. The first purpose of this study was to describe demographics of the school counselor population in Indiana. A second purpose was to identify the relationships that exist between Indiana's middle and high school counselors' knowledge levels, self-assessed knowledge levels, educational backgrounds, and available counseling time with their perceptions of CTE initiatives and programs in Indiana. The last purpose of this study was to identify differences among middle and high school counselors' knowledge and self-assessed knowledge, as well as differences found with gender, years of counseling experience, years of teaching experience, size of student caseload, and number of students in school to counselor perceptions of CTE initiatives and programs in Indiana. A Qualtrics survey was used to collect data. One section of the survey measured counselors' actual knowledge about CTE programs, and another section asked counselors to self-assess their strength of that knowledge. The independent variables include high school counselor knowledge levels of Indiana CTE programming, educational backgrounds, and amount of available counseling time. The dependent variable is the Indiana counselor perception of CTE.

Research Questions

The research questions that guided this investigation include:

1. What are the differences between counselors' knowledge and counselors' self-assessed knowledge?
2. What are the relationships between counselors' knowledge levels and their perceptions about CTE programs and between counselors' self-assessed knowledge levels of CTE and their perceptions about CTE programs?
3. What is the relationship between counselors' educational backgrounds (e.g. attended a CTE program or traditional academic program) and their perceptions of CTE programs?
4. What is the relationship between the amount of time middle and high school career counselors have available for career counseling and their perceptions of CTE programs?
5. What are the differences when comparing the independent variables of gender, years of counseling and teaching experience, and number of students in the school, to counselor perceptions of CTE?

Review of the Methodology

This study used a quantitative approach with an electronic survey as the tool. A survey provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population (Cresswell, 2013). An existing survey instrument created by Dr. Marlon Thornburg in 2016 was used to collect data. The survey received minor changes to reflect specific Indiana CTE issues, in place of Thornburg's information for Kansas. Questions on the survey related to counselor CTE knowledge levels, educational background, available counseling time, and perceptions of CTE programs. This information can be used by

educational institutions and economic development planners in the state to target CTE recruitment strategies for counselors to use with students.

From the original survey designed by Dr. Thornburg, I removed six items from the knowledge section based on committee recommendations. A review of these items indicated that these were not reliable. The survey then had five sections with 31 total questions. The survey was uploaded into Qualtrics for distribution to respondents and for collection of data.

The targeted population for this study was all counselors working in middle and secondary public schools in the state of Indiana during the 2018-19 school year. The IDOE provided schools and their counselor contact information through a list I was given. The research utilized volunteer sampling by asking counselors of their willingness to participate in the study via email. According to Dr. Dillman, Regents Professor in the Department of Sociology at Washington State University and Deputy Director for Research and Development in the Social and Economic Sciences Research Center (SESRC), "there is no other method of collecting survey data that offers so much potential for so little cost" (Dillman, 2007). The steps for conducting an online survey outlined by Dillman guided the surveying process. As such, the first invitation to participate in the survey was sent through Qualtrics on February 6, 2019. From the email address list provided by the IDOE, 66 emails bounced back as undeliverable, leaving 1,035 email addresses. Counselors who had not responded to the invitation received follow up surveys on February 14, 2019 and February 21, 2019. At the conclusion of the survey a thank you e-mail was sent to participants. The survey closed February 28, 2019. I exported the collected data for analysis into Statistical Package for Social Science (SPSS). Dr. Kianre Eouanzoui of Ball State University worked along with me through the analysis of the data.

Major Findings

The following are brief descriptions of the major findings supported in this research study.

- This study did not show statistical significance when analyzing the differences between counselors' knowledge and self-assessed knowledge of CTE in Indiana.
- For the counselors participating in the survey, no relationship existed between knowledge levels and their perceptions of CTE. However, a weak monotonic relationship did exist between perceived knowledge levels and CTE perceptions.
- Strong consistencies exist for variables related to educational backgrounds among Indiana's counselors. Descriptive data emerged out of the skewed data due to the majority of participants selecting the same option from the provided answer choices. Overall, the results show counselors lack educational background experiences through schooling and past work experiences related to CTE.
    - All survey participants attended a four-year college or university, with none selecting attendance at a technical school/college or a community/junior college;
    - All participants but one had earned a Master's degree or above, but only 15 of the 175 (9%) reported studying anything CTE related;
    - Education as a major for a Bachelor's degree was reported by 65 of the 175 (37%);
- The counseling and guidance major was chosen for Master's degree work by 164 of the 175 (94%) participants;

- No relationship existed between the amount of time counselors spend with their assigned students or the size of their caseload to their perceptions of CTE;
- Also, participants' gender, years of counseling, years of teaching experience, number of students in a school, or additional job responsibilities assigned to them presented no statistical significance when comparing differences in CTE perceptions; The majority of the sample included females, reporting more than 10 years in their counseling role, with limited teaching experiences; and
- Participants reported a large variety of additional job responsibilities, resulting in time lost from their counseling roles.

Findings Related to the Literature

Previous studies in other states besides Indiana focused on students in subgroups, such as those classified as special education students. Such studies have also investigated relationships and differences related to counselors and their perceptions of CTE. The most recent comparable study in Indiana was in 1977. This study set out to include all students, regardless of any classifications, for the state of Indiana to fill the identified gap in literature. Both similarities and differences were found between this study and the studies presented in Chapter Two. This study specifically sampled Indiana counselors working in public schools at both the middle and high school levels. The goal was to find relationships and differences that might exist among common variables of education, time, demographics, and background experience, comparing or correlating these to counselors' perceptions of CTE programming. Presentation of the results of the study are next with each of the five research questions presented separately and sequentially. Highlights of the literature base related to this study are included with each research question.

Question 1: What are the differences between counselors' knowledge and counselors' self-assessed knowledge? The first research question sought to understand more about the actual knowledge levels of counselors about CTE in the state of Indiana and the perceived knowledge levels of CTE as held by the participants. Research has highlighted that counselors are key to the exposure of information students receive for CTE, therefore their understanding of the facts and the values of the programming to all students in their caseload has the potential to impact enrollment in CTE programs (Anctil, Smith, Schenck, & Dahir, 2012; Belasco, 2013; Schenck, Anctil, Smith & Dahir, 2012).

The results of this study suggest there is no relationship between how much a counselor knows about CTE and their perception level of the associated programs. However, I acknowledge a reduction in the number of questions in the knowledge section of the survey (due to reliability concerns) may have influenced the results.

As presented in the literature review, studies have shown career development programs for counselors in training have been lacking in strength because of a deficit in advanced classes that focus on the topic (Lara, Kline, & Paulson, 2011; Morgan, Greenwalt, & Gosselin, 2014). These studies also reported, because of a lack of training and knowledge, counselors often lack high levels of confidence to provide CTE counseling to students. Counselor education at the post-secondary level may need a new design to provide a wider selection of approaches and resources for career and college counseling (Curry & Bickmore, 2012; Morgan, Greenwalt, & Gosselin, 2014). No research has been done to assess the theories behind current Indiana counselor practices (Wagner, 2009), which could provide valuable knowledge in the best ways to design counselor training for CTE. Most theories on career choice used for the purpose of career education target the process of career choice, especially for subgroups like females and

minorities (Holzer, 2009). Trolley (2011) reported another gap in research as an absence in research for evaluating the programs used to train counselors in the country. Pre-service counseling training, field experiences, and classes specifically designed with career counseling tasks related to CTE could increase competencies and confidence of counselors. College leaders who adjust counselor preparation programs to include more CTE knowledge would reflect the need to adapt to an ever-changing society, economy, and workforce.

State leaders have a stake in the CTE knowledge levels of Indiana's counselors, too. ASCA (2013) reported that despite understanding the importance for students to receive career advisement, state leaders have had limited dialogue with counselors and lack research on how to reach the desired results.

In a similar study in the state of Kansas, Dr. Thornburg (2011) also found the two variables of actual knowledge and self-assessed knowledge, which he referred to as perceived knowledge in his study, are independent of each other and do not have a statistically significant association. Results from Dr. Thornburg's study come for a survey that served as a basis for this study.

My assumption going into the study was there would be a positive relationship where the more counselors knew about CTE and its values, the higher the counselors would rate themselves on self-assessed knowledge levels. However, no statistically significant finding resulted from my study for this question. Again, the reduction in questions from the knowledge section on the survey may have directly affected these results for research question one.

Question 2: **What are the relationships between counselors' knowledge levels and their perceptions about CTE programs and between counselors' self-assessed knowledge levels of CTE and their perceptions about CTE programs?** The purpose of the second

research question was to determine if the level of knowledge and the level of self-assessed knowledge would have connections to how counselors perceive the value of CTE for students. The Spearman's Rho correlation used to determine the relationship between counselors' knowledge levels and their perceptions of CTE resulted in no statistically significant differences. However, counselors' self-assessed knowledge levels and their perceptions of CTE indicate a statistically significant difference. Even though it is weak, there is some relationship that as counselors' perceived knowledge level went up, so did counselors' perceptions of CTE.

In contrast to this study, Dr. Thornburg's study found knowledge levels did have a significant impact on perceptions. As knowledge levels increased in his Kansas study, so did positive perceptions of CTE. This might suggest that more items in the knowledge section of the survey might result in different findings. Alternatively, there may have been error in his study based on using items that had not proved to be reliable in his pilot.

Many Indiana counselors have worked with a focus on the necessity of academics as a means to college preparation. The mantra of college-for-all, however, has been shown to be unrealistic in most high schools (Aliga, Kotamraju, & Stone III, 2012; Symonds, Schwartz, Ferguson, 2011). This focus on college preparation may connect to the levels of knowledge counselors have for CTE issues and their perceptions related to how CTE would serve students. Specifically, these perceptions on how CTE would positively serve students the counselor may view as heaving great college potential.

Also, of related interest would be how administrators have led counselors on how to career counsel students. Counselors often connect to the mission and vision of the school (Gysbers, 2012). If the college-for-all mantra has been the basis of the vision of leadership in the school and/or corporation, then the agendas for meetings and professional development for staff

held at the school likely mirrored that vision, providing staff with tools and knowledge to reach the goals set according to the vision. This focused vision would likely result in a lack of opportunities to expand professionally in the addition and growth of CTE plans for their students as an option in their education process. Research supports the administration piece in that counselors have expressed fear of negative impact on their professional evaluations if they do not meet set quotas for advanced diplomas and college enrollment as set by their administration (Malik, 2005). Wagner (2008) included administration with teachers and school counselors as those with significant importance in getting information to students in the attempt to produce citizens who are able to understand and succeed with the changing world of employment. As such, the alignment of administrative focus, offered professional development, and staff buy-in have the potential to increase the knowledge levels of CTE among counselors, which could then impact associated perceptions.

Views on academic strengths of CTE may affect counselor perceptions. CTE students experience internships, externships, hands-on activities, and work-based opportunities, yet research showed counselors perceive lower levels of academic rigor exist (Carnevale et al., 2011). Along with this is the misperceptions that CTE programs are for underachieving students (Brown, 2009). Years of stigma that CTE is not for everyone will take a long time to change.

Schools do not need to work alone to provide training for counselors. The state provides financial support for growth in CTE knowledge. The government rewrote the Perkins Act to allow funds for career guidance for students to participate in vocational education programs (Moore, 2017). Perkins funds are available for training and needed resources for counselors, administrators, teachers, and families to support career decisions (Threeton, 2017). Due to the projected need for CTE training to fill high-demand and high-wage jobs in Indiana, another

revision occurred to the Perkins Act in 2017. These changes show the state's growing support for CTE as a post-secondary pathway and their willingness to provide information to those who work directly with students.

Question 3: What is the relationship between counselors' educational backgrounds (e.g. attended a CTE program or traditional academic program) and their perceptions of CTE programs? The third research question sought to understand if variables connected to educational experiences of the participants held a relationship with the perceptions they held related to CTE. As such, I did analysis on the different educational backgrounds of counselors and their perceptions of CTE programs. I used data from section C focusing on perceptions and data from section D with questions of varying styles related to educational backgrounds. Due to the overwhelming consistencies in the responses provided by respondents descriptive data was generated and shared

In his 2011 study of counselors in Kansas, Dr. Thornburg researched a similar question. His analysis of survey data found no statistical significance associated between counselor educational backgrounds and their perceptions of CTE.

Patricia Martin who served as the Vice President for the National Office for School Counselor Advocacy stated, "Never before in the history of our nation have we had a greater need to prepare every student for the greatest range of opportunities after leaving high school" ("Eight components of college and career readiness," 2010). The IDOE needs counselors with the appropriate knowledge and training who can advise students on CTE initiatives if it is to meet their objective of graduating students who are college and career ready. Data show high school students who have participated in an internship during their high school experience are better prepared to make career pathway choices than those who do not experience these hands-on

activities (Battelle Memorial Institute, 2012). This supports better understanding of the options students have through their active participation in CTE programs. It also leads to the question, "how would the participation of counselors in similar CTE activities influence their perspectives as counselors?" The overall results from this research show counselors lack educational background experiences through schooling and past work experiences.

Butler University in Indiana conducted research with counselors who graduated from the secondary counselor program. A survey asked respondents to rate their confidence and competency levels in eight counselor areas. College advisement and career achievement ranked as the two lowest levels (ASCA, 2013). This connects to the educational background counselors get while in their training.

The most important variable for effective counseling according to research conducted in the 1970s and 1980s (Barak & LaCrosse, 1975) is personal characteristics of the counselors. Rogers (1975) found the counselor's personality are a key component in career advisement. Background experiences often provide the foundation for these traits, which could include whether or not a counselor has CTE background experiences. If these findings are still relevant today, additional research on the value of CTE experiences for counselors could allow administrators to know if those characteristics are important to hiring new counselors to support student involvement in CTE.

Question 4: What is the relationship between the amount of time middle and high school career counselors have available for career counseling and their perceptions of CTE programs? The fourth research question was developed to gain better insight on any possible relationships that exist between time related variables counselors face in their work and the perceptions they hold towards the value of CTE. Findings in the literature highlight concerns

related to school size, caseload sizes, and face-to-face opportunities counselors have to work with students. It is issues such as these that have made it increasingly more difficult for counselors to provide the amount of career guidance they desire (Schenck, Anctil, Smith, & Dahir, 2012). In their study, Baggerly and Osborn (2006) found that the majority of counselors reported being satisfied with their job, but almost 90% reported increased stress due to the extra roles demanded in their job and the impact on counseling opportunities.

Though the literature review is full of concerns related to the number of students that counselors are assigned, a Spearman's Rho analysis indicated a counselor's perception of CTE was unrelated to the number of students in an assigned caseload.

Dr. Thornburg in his research found a statistically significant association of time available to counsel with positive perceptions of CTE. His results found the majority of counselors in Kansas are spending less than five hours per year providing students with career counseling. Thornburg's results align with the results of this study.

Counselors often face high counselor to student ratios and the caseloads make it difficult for students to access their counselor (Engberg & Gilbert, 2013; "Indiana school counseling research review Indiana chamber of commerce foundation," 2017; McKillip, Rawls, & Barry, 2012). Most respondents in this research work with 301-500 students on an annual basis. This result aligns with a study by the College Board in 2011 that found the national average caseload of counselors to be 389 students (College Board Advocacy Center, 2011). The results of this study also align to Indiana specifically, where the most recent data from 2014-15 show the average counselor to student ratio at high schools in the state to be at 1:365. Though the three studies align, the numbers all exceed the recommended ratio is 1:250 (American School Counselor Association, 2017; Morgan, Greenwaldt, & Gosselin, 2014). Data gathered in 2012-

13 showed Indiana as having the 10th highest ratio in the US. (Indiana Department of Education, 2017). Several published studies support the fact that schools will support better outcomes for students if they have a reduction in counselor-to-student ratios (Bryan, Holcom-McCoy, Moore-Thomas, & Day-Vines, 2009; Wilkerson, Perusse, & Hughes, 2013). An adjustment in these numbers holds the potential for counselors to cover more career related options, including CTE.

In 2016, the ASCA released research studies that support the value of the work done by school counselors (Hudson & Bolvin, 2018). However, the research did not include information on perceptions counselors held related to how often they met with students or how their work is impacted by counselor-to-student ratios. However, the researchers with the ASCA (2013) found counselor-to-student ratio is a key factor in the planning of postsecondary steps for students.

The literature heavily notes concerns related to the face-to-face time counselors have with students. A Spearman's Rho analysis run to determine relationships between counselor's perceptions of CTE and the amount of face-to-face time they have with students indicated a counselor's perceptions of CTE was unrelated to the amount of time they see students face-to-face.

An overwhelmingly high number of counselors, 74%, selected the smallest option available on the survey of less than five hours of face-to-face time with students per year. Since counselors support decisions related to student academic, social/emotional, and career needs, factors such as limited face-to-face time may contribute to students experiencing a lack of exposure to comprehensive career guidance from their counselors. Thus, students may be less able to make informed college and career related choices to ensure preparation for life following

secondary education, which would require other sources for the information (Anctil, Smith, Schenck, & Dahir, 2012; Belasco, 2013; Schenck, Anctil, Smith & Dahir, 2012).

The small amount of face-to-face time may be due to additional job assignments that 96% of respondents indicated being a part of their job. The large amount of extra activities and roles required of counselors during the day is an ongoing issue heavily reported in the literature (ASCA, 2012; McKillip, Rawls, & Barry, 2012; Morgan, Greenwaldt & Gosselin, 2014; Paisley & Borders, 1995). In their report, Baggerly and Osborn (2006) describe the school counselor position as one in which there are frequent expectations to perform tasks unrelated to school counseling. Extra duties given to counselors has been a part of school culture for many years. During a review of literature, evidence of assigning duties to counselors not originally a part of the guidance office was reported as early as 1923 including work others in the school did not have time to complete (Gysbers, 2001; Schenck, Anctil, Smith, & Dahir, 2012). As such, school counselors often feel pulled in many directions and are at risk for high levels of stress, and burnout in their job (Butler & Constantine, 2005; Wilkerson & Bellini, 2006).

Due to the extra roles, counselors must review their list of responsibilities and prioritize them on a regular basis. Time constraints mean some jobs receive more or less time than previously allotted. As part of the prioritizing process, administration should discuss the CTE counseling issues with the team so they all can work together and reassign job responsibilities as needed to provide the necessary face-to-face time.

A list of jobs counselors do is often long and involved, sometimes including administrative support or discipline (ASCA, 2012). A large majority of respondents in this research study, 96%, indicated they do have additional job responsibilities. Research has shown that serving in clerical or administrative capacities takes away from implementing a

comprehensive counseling program and is not compatible with the school counselor's role. The extra roles prevent the counselor from having a positive impact on the school's academic mission directly (American School Counseling Association, 2017; Mullen & Lambie, 2016).

Respondents received an open-ended opportunity to list their additional jobs, and the list was extensive. The category of *testing* had the highest frequency with 68 (39%) counselors saying it is a part of their job. This aligns with information attained in the literature study indicating time for career counseling has been impacted by mandates of standardized testing related to the No Child Left Behind Act of 2011, wherein counselors have been assigned to testing and non-counseling roles (Morgan, Greenwaldt, & Gosselin, 2014; Schenck, Anctil, Smith, & Dahir, 2012). McReynolds (2006), report school counselors recognize high stakes assessments cause a redirection of time and resources away from innovative, creative, and comprehensive school counseling programs. CTE counseling falls within comprehensive school counseling. The data do not include percentages of time spent on these additional responsibilities, such as testing, which would be valuable data to obtain in a follow up study.

Question 5: What are the differences when comparing the independent variables of gender, years of counseling and teaching experience, and number of students in the school, to counselor perception of CTE? The fifth and final research question sought to understand if a there would be a difference when comparing various variables common to all counselors and their CTE perception. Variables used included gender, years in a counselor role, and past and/or present teaching experiences. In each of the one-way ANOVAs performed with the variables mentioned, the outcomes indicated no levels of significance for the variable and counselor perceptions of CTE.

There is relatively no research available on the gender of school counselors and the work they do. Research does exist on the gender of the students and the kind of counseling practices that are common. The lack of gender research may indicate an area for further study to see if a counselor gender bias towards CTE exists.

The number of years of experience counselors have had in their counseling role had no level of significance in this study. The majority of respondents, 62%, indicated they have had 10+ years of counseling experience. The IDOE (2013) reported Indiana's population viewed CTE as exploratory and without rigor prior to 2010, which aligns with the time many of the participating counselors started their employment.

Counselor years of teaching experience also resulted in no significant differences. Fifty percent of counselors selected from the smallest option of 0 to 3 years of teaching experience. One criterion some school districts use when screening applications for counselors is whether they have prior teaching experience. Many administrators seem to prefer to hire those with some classroom teaching experience (Peterson, Goodman, Keller, & McCauley, 2004). Whether or not school counselors should have teaching experience has been a subject of debate for several decades. Background as a teacher can serve to facilitate relationships with teachers who then feel the counselor has walked in their shoes, and are likely to be more knowledgeable about the dynamics and politics of schools (Olson and Allen, 1993). On the other hand, negative teaching experiences can influence the individual when transitioning to the role of counselor (Quorto, 1999). The variance in the number of states that require a teaching certificate for their counselors reflects the differing opinions of the value of a teaching background. Nationally about 15% of school districts require prior teacher training according to a study in 2007 by the ASCA.

Surprises

As a researcher, I was surprised with the number of analysis that resulted in no statistically significant results. Based on the large number of articles about both the roles on counselors and the changing landscape of CTE, I predicted results that were more significant. These results may have to do with the design of the survey or time restrictions of respondents.

I was also surprised to find the large consistency of responses to survey data collected for research question three. The educational backgrounds of counselors participating in the study were so similar I reported descriptive data instead of analyzed data. Though different from the original plan, I was able to identify strong trends that exist for Indiana's counselors.

Limitations

It was assumed respondents in the study would answer survey questions honestly and factually. Voluntary participation may have contributed to lower than expected response rates. Also, time constraints for respondents who already have many job responsibilities as indicated on the survey and an unwillingness to participate due to the perception the study is questioning their motivation and knowledge may have impacted participation. Other limitations cited by Dr. Dillman include not everyone may be connected electronically for web-based surveys, not all potential respondents are equally computer literate, and e-mail addresses may be difficult to obtain (Dillman, 2007). Delimitations included the participation of counselors only within the state of Indiana, and only counselors employed in public school corporations.

Though self-reported data is an efficient way to gather data for a sample, difficulties in the ability to independently verify the information creates limitations. In other words, researchers must take what people say at face value, whether in interviews, focus groups, or on questionnaires. However, self-reported data can contain several potential sources of bias

including remembering or not remembering experiences or events that occurred at some point in the past, misinterpreting the question, recalling events that occurred at one time as if they occurred at another time, and exaggeration (Hoskin, 2012; Martinez, 2017; Price & Murnan, 2004).

Conclusions

Contemporary issues have resulted in school counseling today being very different from its historical beginnings, though the core purpose will always be to help with the well-being of students (Bain, 2012). There is much to be learned from the past and implement that information into today's comprehensive guidance (Gysbers, 2001). Since administrators ask counselors to support decisions related to student academic, social/emotional, and career needs, factors such as high caseloads and limited face-to-face time may contribute to students experiencing a lack of exposure to comprehensive career guidance from their counselors. Thus, students may be less able to make informed college and career related choices to ensure preparation for life following secondary education, which would require other sources for the information (Anctil, Smith, Schenck, & Dahir, 2012; Belasco, 2013; Schenck, Anctil, Smith & Dahir, 2012).

Based on the descriptive statistics of the study, it can be concluded that Indiana counselors lack CTE experience. Descriptive statistics also support the conclusion counselors are faced with time issues based on the low number of face-to-face hours available to work directly with students, and counselors' high student caseloads. Time available for student counseling is often cut short by the amount of testing and scheduling responsibilities placed on them by the administration. All of the above could influence their ability to provide students with CTE guidance.

Recommendations for Further Research

The results of this study provide researchers with opportunities to conduct further research on the perceptions held by Indiana's public school counselors on CTE in Indiana. As this study included only counselors in Indiana, one recommendation for further research is to replicate the study in other states. The expansion of this work could then include a national comparison of the results to identify larger trends and possible regional generalizations.

Future research may want to include a component to better understand if class-scheduling procedures counselors employ when working with their students does impact CTE enrollment. This study showed scheduling as the second highest additional role in their job. Are student selections to participate or not participate in CTE based on conflicts in scheduling options? Are choices made based on future education and career plans, general student interests, other variables, or a combination of all the listed variables? This information may identify barriers students face when selecting from the many class options available to them, and the role counselors play in the decision process.

A recommendation for future replications of the study would be to edit the collection of years of counseling experience with the survey. The current groupings of years resulted in skewed results, leading to the suggestion participants write in the years of experience, with the researcher then grouping according to quartiles. This approach would provide for more data points.

As mentioned previously, counselors are often influential in the choices students make related to future education and career choices. However, there are other stakeholders who also play a role in the process at varying levels and times in a student's life. Further research could include how perceptions of parents, peers, and teachers influence student decisions to enroll or

not enroll in CTE courses. This would provide a more comprehensive understanding of why students make career related decisions and provide counselors with background information about how the students they work learned about CTE.

Furthermore, studies could expand to levels of higher education where counselors receive their initial training to investigate possible relationships of the perceptions the professors have on CTE to the amount of time and types of information given to the topic during classes. The level of exposure at this level holds the potential to affect the work done by counselors throughout their careers. School counselor preparation, if poorly designed, has the potential to negatively guide students and schools (Bain, 2012). Trolley (2011) discovered a lack of research exists to evaluate the adequacy of preparing school counselors for today's jobs.

Indiana is in an ideal situation to begin a longitudinal study with the increased focus on CTE, along with changing graduation pathways. These changes create an opportunity to investigate impacts of the aforementioned changes and enrollment in CTE. Indiana's newly developed graduation plan, set to be fully implemented with the graduating class of 2023, offers a variety of pathways a student can take to connect their secondary studies to postsecondary education and the workplace. This restructured systemic graduation model places greater emphasis on the school's role to provide college and career readiness and CTE for all students, with a growing recognition that both college readiness and career readiness are valuable and worthy of a unified vision. CTE courses fit nicely with the plan as they emphasize both academics and work skills to make broad connections to future education and work (Bozick & Dalton 2013; Hubbard & McDonald, 2014; Hyslop, 2008; Stipanovic, Lewis, & Stringfield, 2012; Threeton, 2007). Will schools see enrollment numbers go up in the future? In Indiana, Annual Performance Reports include information on students enrolled in a career and technical

program, including the number of students and the percentage of students earning a career and technical diploma at both the district and state levels ("How states are making career readiness count: A 2016 update," 2016). The state tracks that data, but if enrollment numbers change, the bigger question becomes why the changes occurred. That answer may be useful as administrations adapt to potential staffing changes and possible funding implications.

Summary

The purpose of this study was to get a closer look at Indiana's counselors and their perceptions of CTE. This study did reveal a relationship between counselors' self-assessed knowledge levels and their perceptions of CTE. Although the study did not find statistically significant results related to the other research questions, common characteristics of counselors in Indiana and the work they do, along with recommendations for further studies were identified. As was noted earlier, a contributing factor to the lack of statistically significant results could be the knowledge section of the survey, which received modifications due to question reliability concerns.

Career development was intended to be an equal domain with the other two domains in the ASCA model; however, in reality, there is a gap in the need for the guidance and the actual practice (Morgan, Greenwaldt, & Gosselin, 2014; Schenck, Anctil, Smith, & Dahir, 2012). Due to discussed variables, there is limited face-to-face time with students to provide the counseling that would cover CTE related topics. In 2004, Hughes and Karp conducted research with a national poll of school counselors. Their focus, school-based career development, revealed only 8% of respondents said their number one goal was helping students plan and prepare for their work roles following high school graduation. Many identified *time* as their biggest constraint.

Research on counselor-led career guidance often does not define the length of time spent with an individual for conferencing, making it difficult to collect valuable data (Parsad & Lewis, 2003).

Due to ever changing needs of Indiana's economy and opportunities for students to be gainfully employed as adults, it is important for all stakeholders in education and community leadership to stay informed about what CTE programming can offer. As goals, missions, visions, and activities of CTE align with those of our education system, perceptions of CTE held by counselors are likely to also evolve.

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Appendices

Appendix A

My name is Michelle Grewe and I am currently working on my dissertation that looks at perceptions high school counselors in Indiana and the career counseling they offer students. During my research I came across your dissertation and survey. My committed chair and I both believe your survey, with small changes to be appropriate for the state of Indiana, fits well with the work I am doing.

Therefore, I am asking for your permission to use your CTE perceptions survey, with Indiana specific tweaks, for research to be used in my dissertation. Credit to you will be given in all spots appropriate, as well as sharing my results.

Dr. Thornburg, please let me know if I have your permission. Thank you.

--

Michelle Grewe
Director of Curriculum, Instruction, and Assessment
Westview School Corporation
260*768*4404
Email: grewem@westview.k12.in.us

9/5/2018 Google Apps Vault - Re: Dissertation Survey Question

On Tue, Jul 24, 2018 at 6:45 PM Marlon Thornburg <marlont@coffeyville.edu> wrote:

Michelle,

Thank you for your message. I am more than happy to allow you to utilize the Perceptions of CTE Survey from my dissertation for your study. I also agree to the state of Indiana tweaks as you mentioned.

Please let me know if you have any questions, or need additional information. I wish you the best as you study this important topic.

Sincerely,

Dr. Thornburg

Appendix B

Dear Indiana Middle and/or High School Counselor,

My name is Michelle Grewe and I am trying to complete my doctorate degree through Ball State University. I am kindly requesting your participation in a study titled, *Perceptions of Career and Technical Education held by Indiana's Public School Counselors*. There have been numerous changes to Career and Technical Education at the state and federal level in recent years, and my intent is to add to the literature on the topic through the lived experiences of Indiana's middle and high school counselors. This is a letter of invitation for participation with hopes for a strong response rate to a short survey.

Thank you for your time and participation.

Sincerely,

Michelle D. Grewe,
Doctoral Student, Ball State University

To participate in this research, the survey can be accessed through the following link: https://bsu.qualtrics.com/jfe/form/SV_3IagcYWTL35sjBz

Appendix C

Knowledge Levels and Perceptions of Career and Technical Education (CTE) Survey

This electronic survey is created to assess knowledge levels and perceptions of Indiana's Career and Technical Education (CTE) program as held my middle and high school counselors in public schools in the state of Indiana. This study will provide valuable information and possibly support future decisions made by education leaders.

Qualtrics, a software program available through Ball State University, will be used to gather results and generate reports. The data collected will only be available to the and research assistant and will be stored on the researcher's password protected computer. After seven years the data will be deleted. All data will be kept anonymous and no identifying information will appear in any presentation of the data.

Your participation in this survey is voluntary and you are free to withdraw at any time. In order to participate you must be a practicing counselor in a public middle or high school in the state of Indiana. This survey will take approximately 10 minutes to complete.

Consent

Yes, I give my consent to participate in the following survey and meet the criteria described above.

No, I do not give my consent to participate in the following survey.

Michelle Grewe, Principal Investigator, mdgrewe@bsu.edu
Marilyn Quick, PhD, Faculty Advisor mquick@bsu.edu

IRB Contact Information: For one's rights as a research subject, you may contact the following: Director, Office of Research Integrity, Ball State University, Muncie, IN, 47306, (765) 285-5070 or at rib@bsu.edu.

Study Title **Perceptions of Career and Technical Education Held by Indiana's Public School Counselors**

Study Purpose and Rationale

The purpose of this study is to identify the differences between Indiana's middle and high school counselors' knowledge levels of CTE initiatives and programs in Indiana, educational backgrounds, and available counseling time on their perceptions of CTE.

Inclusion/Exclusion Criteria

Participants must be currently employed as a middle or high school counselor at a public school in the state of Indiana.

Participation Procedures and Duration

Participation in this study includes engaging in an anonymous online survey administered through Qualitrics. This survey will take approximately 10 minutes to complete and is about the current knowledge levels and perceptions Indiana's middle and high school counselors have on CTE in Indiana.

Data Confidentiality or Anonymity: All **data will be maintained as confidential.**

Storage of Data and Data Retention Period

Data will be stored on a password protected laptop that is kept in a locked office at night. Data will be destroyed within 7 years of the completion of the study.

Risks or Discomforts: **There are no anticipated risks or discomforts with this study.**

Benefits: **There are no anticipated benefits to participating in this study.**

Voluntary Participation

Your participation in this study is completely voluntary and you are free to withdraw your permission at any time for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before signing this form and at any time during the study

IRB Contact Information

For one's rights as a research subject, you may contact the following: For questions about your rights as a research subject, please contact the Director, Office of Research Integrity, Ball State University, Muncie, IN 47306, (765) 285-5070 or at orihelp@bsu.edu

Consent

By clicking yes and entering the survey, I agree to participate in this research project entitled Perceptions of Career and Technical Education Held by Indiana's Public School Counselors. I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this project and give my consent to participate. To the best of my knowledge, I meet the inclusion/exclusion criteria for participation described above.

Researcher Contact Information

Principal Investigator:
Michelle Grewe, Graduate Student
Department of Educational Leadership
Ball State University
Muncie, IN 47306
Telephone: (574) 214-8981
Email: grewem@westview.k12.in.us

Faculty Supervisor:
Dr. Marilynn Quick
Department of Educational Leadership
Ball State University
Muncie, IN 47306
Telephone: (765) 285-3287
Email: mquick@bsu.edu

◯ Yes, I consent to do the survey.

◯ No, I do not consent to do the survey.

Section A: Counselor's Knowledge Level of CTE

The following questions are designed to assess the knowledge level of Indiana's public middle and high school counselors regarding Career and Technical Education (CTE) initiatives in Indiana. Please indicate what you believe to be true by clicking in the appropriate circle.

The following is true of Indiana's CTE plan:

a. High school students enrolled in a CTE course within a program at a Community or Technical College do not pay tuition.
b. High school students enrolled in a CTE course within a program at a Community or Technical College must pay ½ of any industry-recognized third part certification testing.
c. High schools receive per credit hour payments for each student who completes a priority CTE course.
d. All of the above are true statements.
e. Only A and C above are true statements.

From your experience, which of the following is a true statement?

a. Many Community and Technical Colleges have articulation agreements in place to transfer CTE credits to a university allowing CTE students the opportunity to complete a bachelor's degree.
b. Industry is seeking qualified workers with industry-recognized third party certifications.
c. Indiana's CTE plans stress the need for industry recognized third-party certifications.
d. All of the above are true statements.
e. I do not know.

From your experience, which of the following is a true statement?

a. All available CTE programs at Community and Technical Colleges in Indiana qualify for financial incentives.
b. Only the programs listed on the Indiana Department of Workforce Development high demand occupation list qualify for financial incentives.
c. A high school may not claim a financial incentive on a CTE program/pathway that the school district does not provide.
d. All of the above are true statements.
e. I do not know.

Section B: Counselor's Perceived Knowledge Level
Please respond to following survey questions using the scale:
Poor
Below Average
Average
Above Average
Excellent

These questions are designed to assess how Indiana's public middle and high school counselors rate his/her knowledge level of CTE programs, area workforce needs, and the CTE initiatives in Indiana.

My knowledge of CTE career pathways available to high school students in the state of Indiana is:
Poor
Below Average
Average
Above Average
Excellent

My knowledge of the skill requirements of CTE careers is:
Poor
Below Average
Average
Above Average
Excellent

The quality of information I am able to provide to students about CTE programs is:
Poor
Below Average
Average
Above Average
Excellent

My knowledge of current workforce needs in the state of Indiana is:
Poor
Below Average
Average
Above Average
Excellent

My knowledge of local workforce needs in my community is:
Poor
Below Average
Average
Above Average
Excellent

My knowledge of the CTE wage and demand categories is:
Poor
Below Average
Average
Above Average
Excellent

Career Counselor Perceptions of CTE
Section C: Career Counselor Perceptions of CTE
Please respond to the following survey questions using the 5-point Likert scale:

Scale:
1 = Strongly disagree
2 = Disagree
3 = Undecided
4 = Agree
5 = Strongly agree

These questions are designed to assess perceptions of Indiana's public middle and high school counselors about Career and Technical Education (CTE) programs and their incorporation into curricula.

Certifications are valuable for students to secure future employment.
Strongly disagree
Disagree
Undecided
Agree
Strongly agree

CTE is an avenue to retain students who are at risk.
Strongly disagree
Disagree
Undecided
Agree
Strongly agree

Exposure to available CTE programming for students should occur prior to the start of high school.
Strongly disagree
Disagree
Undecided
Agree
Strongly agree

It is feasible for a student to attend a CTE program to get all their required high school credits to graduate.
Strongly disagree
Disagree
Undecided
Agree
Strongly agree

Parents are supportive of their students enrolling in CTE courses or programs.
Disagree
Undecided
Agree
Strongly agree

Counselors have sufficient time to expose students to CTE pathways.
Strongly disagree
Disagree
Undecided
Agree
Strongly agree

Counselors have sufficient time to counsel students on their career aspirations.
Strongly disagree
Disagree
Undecided
Agree
Strongly agree

Section D: Educational Background

The following questions are designed to determine the educational background of high school career counselors participating in this research study.

Please check the appropriate responses.

Highest level of education:
Bachelors
Masters
Educational
Specialist Doctorate

As a student, which of the following did you attend? Select all that apply.
Community/junior college
Technical school/college
Four-year college or university

In college did you study in a CTE program area (e.g. Agriculture, Automotive, Electrical, Construction, Computer Graphics, Nursing, etc.)?
Yes, I have a CTE background.
No, I do not have a CTE background.

Do you have experience teaching CTE courses?
Yes.
No.

What was your major for your Bachelor's degree?

Other (please list)

What was your major for your Master's degree?
Counseling and Guidance
Other (please list)

Section E: Respondent Demographics
The following questions are designed to collect demographics about Indiana's public middle and high school counselors participating in this research study.

Please check the appropriate responses:
Sex:
Male
Female
Other

Years of counseling experience:
0 to 3 years
3+ to 6 years
6+ to 8 years
8+ to 10 years
10+ years

Years of teaching experience:
0 to 3 years
3+ to 6 years
6+ to 8 years
8+ to 10 years
10+ years

Do you work as a full- or part-time counselor at your school?
Full-time counselor
Part-time counselor
Not currently working as a counselor

How many students do your currently counsel?
Less than 100 students
101 - 300 students
301 – 500 students
Over 500 students

How much face-to-face contact do you have with each student you currently counsel per school year?
Less than 5 hours
5+ to 10 hours
10+ to 15 hours
Over 15 hours

How many students attend your school?
Less than 250 students
251 - 500 students
501 - 1,000
students
Over 1,000

Do you have additional job responsibilities at your school in addition to career counseling to students?
Yes (please list other major job responsibilities)

My knowledge level of CTE is based on the following factors. Select as many as applicable.
I completed a CTE program in high school.
I completed a CTE program in college.
A family member or someone I know personally completed a CTE program.
I have read materials about CTE programming.
My school currently provides CTE programming.
I have toured or observed students in a CTE program.
My school administration has discussed CTE programming for our students.
I have toured area industry and/or discussed CTE programs with community members.
I have attended state meetings and/or conferences about CTE initiatives.
I have limited knowledge of CTE because I have not been involved, or have read very little about CTE.

Additional comments (optional):